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The Policy and Practice of Public Primary Curriculum in India – A study of Textbooks in Public Primary Schools of District Morigaon (Assam) and District Medak (Andhra Pradesh)

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The Policy and Practice of Public Primary Curriculum in India

A study of textbooks in public primary schools of District Morigaon (Assam) and District Medak (Andhra Pradesh)

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LIST OF ACRONYMS

AP	Andhra Pradesh
ASER	Annual Status of Education Report
BEd	Bachelor in Education
CCE	Continuous Comprehensive Evaluation
CGC|SA	Columbia Global Centers | South Asia
CRC	Cluster Resource Center/Coordinator
DIET	District Institute of Education and Training
DISE	District Information Systems for Education
DPEP	District Primary Education Project
ECCE	Early Childhood Care and Education
EVS	Environmental Science
FGD	Focus Group Discussion
GOI	Government of India
HDI	Human Development Index
IRB	Institutional Review Board
MDEP	Model Districts Education Project
MDG	Millennium Development Goals
MHRD	Ministry of Human Resource Development
NCERT	National Council of Educational Research and Training
NCF	National Curriculum Framework
NPE	National Policy for Education
NUEPA	National University of Educational Planning and Administration
OLS	Ordinary Least Squares
PPS	Probability Proportionate to Size
PTA	Parents Teachers Association
PROBE	Public Report on Basic Education
RP	Resource Person
RTE	Right to Education (Act)
RVM	Rajiv Vidya Mission
SCERT	State Council of Educational Research and Training
SMC	School Management Committee
SSA	Sarva Shiksha Abhiyan
TET	Teacher Eligibility Test

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EXECUTIVE SUMMARY

The passing of Right of Children to Free and Compulsory Education Act (2009) provides a new policy context and a new series of opportunities to strengthening the quality dimensions of primary education in India. The Act further reinforces the suggestions made by the National Curriculum Framework of 2005. Given the recent developments where new provisions are put into place for revision of textbooks, teacher recruitment and training, student assessment and tracking, and so on, we hope that this study contributes to the understanding of district-level concerns pertaining to public primary textbooks and the wider curriculum approach. This working paper is second in the series of three research studies conducted under MDEP's first year's commitment to understand and analyze the primary education scenario in the two districts. The purpose of this paper is to present the findings of empirical research to study the key gaps and challenges in the policies and practices pertaining to curriculum in public primary schools in our two districts of Morigaon, Assam and Medak, Andhra Pradesh.

This paper presents to its readers perceptions of teachers, cluster resource coordinators, resource persons, and staff members from district and state level offices of SSA, DIET, Department of Education and SCERT, on the challenges and opportunities related to the textbooks in public primary schools. The study used a mixed-method design, combining qualitative data from individual interviews (n=16) and focus group discussions (n=20), and observations with a cross-sectional survey of a random sample of primary school teachers (n=789) in the two districts. Primary research in this study attempts to examine:

1. The role of textbooks in the existing curricular approach at schools
2. The nature of alignment between textbooks, and teacher training and student learning in Assam and AP
3. Ways in which textbooks can better support teaching learning processes at schools

Data indicates that textbooks continue to be the prime source for education in schools. However teachers and resource persons across the two sites feel inept to make use of the textbooks in a pattern suggested by the National Curriculum Framework of 2005. Teachers feel rushed to complete the prescribed curriculum and lack of resources make it further more difficult for them to develop teaching learning materials to supplement the use of textbooks. Despite repeated trainings on the relevance of learning by application and use of multi-media, teachers continue to teach through the age old didactic practices. As a result, teachers and students become even more dependent on textbooks that are for most schools and households the only tool for literacy.

The paper concludes with a list of recommendations to the local governments and education authorities that it has derived from an assimilation of findings from different sources. It encourages the local departments of education to view educational needs of their region through an integrated approach. It encourages the local offices to partner with other actors in the field to better understand educational quality and achievement and its determining factors: student health and nutrition, textbook design, teacher training, school participation, district level education and budget planning, school environment, and monitoring and evaluation.

1. INTRODUCTION

India has come a long way on the road to development since it became independent in 1947. Having proven to the world its feat in achieving one of the highest growth rates over the past decade, India's achievements on an economic front is not easy to dismiss. However, one has to only look beyond the glitter of the metropolitan cities to be exposed to some of the major gaps in the country's claims to success (Dreze and Sen, 2013). Literature on poverty and inequality reveals that while India was growing economically over the last decade, its inequality quotient was rising in tandem. Additionally, there have been several concerns about the sustainability of this growth and consequentially, the economy has slowed down significantly from its record high rate that it achieved over the last decade.

The education sector in India, for reasons beyond mere coincidence, seems to mirror a similar pattern of growth. Akin to most other developmental concerns of the country, educational achievements over the past decade are rife with contradictions and inconsistencies. Successive rounds of data collection and analysis carried out by ASER have revealed that children continually fail to perform satisfactorily on basic reading fluency and simple arithmetic operations. Despite close to 100% enrolment rates in both rural and urban contexts, the existing schools have failed to ensure that even after eight years of schooling, each child would have basic skills of reading, comprehension, expression, critical thinking and problem solving (ASER, 2013). This reality of our schools, particularly in the rural contexts of the country, brings us to question the value of schooling. Policy literature on public education over the last two decades unequivocally emphasizes the urgent need to improve the quality of teaching and learning in schools in order to sustain the rapid increase in enrolments.

In an attempt to better understand the needs and opportunities of public primary schools in India from the ground level, this paper presents the research findings of a study conducted on public primary curriculum in two districts of the country. It endeavours to address the following research questions:

- What are some of the prevalent issues pertaining to curricular policies and practices in public primary schools of rural Assam and Andhra Pradesh?
- In what ways can textbooks better support teaching-learning processes in public primary schools of rural Assam and Andhra Pradesh?

This working paper presents multi-stakeholder perspectives on the state of textbooks being used in public primary schools. It attempts to highlight the key gaps and possibilities of the curriculum for improving the quality of education at schools. The following sub-sections position this paper within the larger research and development goals of Columbia Global Centers in India.

1.1 The Columbia Global Centers | South Asia (Mumbai)

The Columbia Global Centers | South Asia (CGC|SA) is the fourth center Columbia University has launched around the world. The Center, headquartered in Mumbai, India, provides a base for scholarly activities throughout South Asia and advances the University's academic partnerships and programs in the region. The Center's activities are organized around four

pillars: Research, Education, Applied Scholarship, and Outreach. Activities of the CGC|SA include a wide range of disciplines, from education to health to sustainable development, and represent partnerships with several schools and institutes at Columbia University, and in the region.

1.2 Model Districts Education Project (MDEP)

MDEP | Access to Achievement is a collaborative, five-year demonstration project of the Columbia University Global Center | South Asia, the Government of India, and key education stakeholders in selected rural districts of India. Building on the experience of the Global Center's Model District project to improve maternal and child health outcomes in India, MDEP aims to use current scientific evidence and best professional practices to develop, recommend, monitor, and evaluate a high quality, cost-effective, transferable and scalable model of primary education. Selected districts will serve as regional pilots for scaling up improvements. Currently, the project is present in Morigaon, Assam and Medak, Andhra Pradesh. However, this working paper, and continued work during the course of the project, seeks to contribute to discussions of what is required to strengthen primary education systems for India's rural citizens, and aims to inform policy makers, program managers, and health researchers.

1.3 Purpose of the project

This paper is third in the series of research studies conducted under the Model Districts Education Project (MDEP) for Columbia Global Centers | South Asia (Mumbai). The purpose of the proposed project is to improve the quality of primary education by developing and testing a multi-level, evidence-based model of primary education that is "locally owned and operated" yet readily adaptable for other locales. There are two specific aims, each with discrete, measureable outcomes:

1. to improve the quality of student learning
2. to lower dropout rates

The project seeks to demonstrate that a relatively modest, targeted program of innovations and resources geared toward *community building*, *teaching and learning*, and *educational programming, coordination, monitoring, and evaluation* will significantly improve the two outcomes of interest, while simultaneously being cost-effective and readily scalable. The project is thus also expected to facilitate India's progress towards Millennium Development Goals which address issues of universal access to primary education and related outcomes by the year 2015.

1.4 Purpose of the paper

As mentioned earlier, this working paper is second in the series of three[1] research studies conducted under MDEP's first year's commitment to understand and analyze the primary education scenario in the two districts. The research is focused on understanding the key challenges and opportunities that the administrative systems and policies and the contextual particularities of the two sites pose for developing relevant student curricula and effective

[1] The other 2 being:

a. Cross-country comparative review of public primary education
b. Study of teacher training policies and practices in Medak and Morigaon

teacher training programs. These papers are expected to build the foundation for an action oriented research project on rural primary education through which MDEP aspires to support the local structures and public provisions of primary education in Assam and Andhra Pradesh.

2. CONTEXT OF PRIMARY EDUCATION IN INDIA: RECENT DEVELOPMENTS

The education landscape in India has changed enormously since its independence. This difference was brought about in various forms and levels, impacting the scope and quality of both demand and supply sides of public primary education in India. Bolstered by the increasing evidence to prove a connection between education and development (Dreze and Sen, 2013), as well the human rights approach to look at development from a social perspective (De, Khera, Samson and Kumar, 2011), both national and international stakeholders have strongly pushed for a more comprehensive approach to education in the country.

This decade has witnessed tremendous change in the landscape of Indian education. Education surveys from the 1990s show abysmally low levels of achievements for India in the field of education (De, Khera, Samson, and Kumar, 2011). For years India was focusing on issues of access, trying to universalize enrolment in primary schools. In response to the National Policy on Education (1986), the late 1980s and the early 1990s saw a plethora of new schemes implemented to extend the coverage of quality primary education. The District Primary Education Programme (DPEP) was one of the key programs initiated at the district level in many states of the country. The focus of this program was to provide universal access to primary education. This focus on primary education benefitted significantly from the rising global action on education following the Education for All Conference in Jomtein in 1990.

DPEP expanded its coverage across districts progressively through a phase-wise approach until it was subsumed by Sarva Shiksha Abhiyan (SSA) in 2001. SSA retained most of the DPEP goals extending it beyond primary (grades 1-5) to elementary (grades 1-8) school. These goals and aspirations matched well with the priority goals reinforced by the Dakar World Education Forum and the Millennium Development Goals (MDG) Summit in 2000. The coordination of national and international development priorities helped the Indian government to raise significant financial support for the education sector. SSA became the overarching mission under which different education programs were planned and implemented at the central as well as the state level. While some attention was paid to improving the quality of education in schools, the predominant focus of the mission remained to increase enrolments in elementary schools. In order to track and project progress to keep up with international comparisons on MDGs, a comprehensive database on schools was developed under the District Information System for Education (DISE). DISE has played an instrumental role in helping the states identify and relate different variables in educational access, resources and achievement. This development has provided a large scale empirical basis to emphasize the need to move beyond enrolment and ensure quality of experience and learning at a school.

With the introduction of Rights to education Act (2009), for the first time in the history of education in India the rights framework for education has made it compulsory for the State to

"ensure learning of equitable quality for all children" (MHRD, 2011, p. 56). This is a major departure from the age old tradition of giving preference to 'merit' and segregating children into schools of different quality based on their proven skills and abilities. The previous "selective" system of education provided highly resourced model schools to the most 'able' children. The current Right to Education Act questions the notion of merit and reminds us of its strong relation with social advantage (MHRD, 2011). The Right to Education Act has further strengthened the arguments made by the National Curriculum Framework of 2005 and the resulting move towards Continuous Comprehensive Evaluation (CCE) policy[2].

This last decade has seen enormous investment in the field of elementary education. However, financial allocations still remain inadequate. It is also important to note that despite large investments in education there has been no significant increase in the percent GDP allocation for education since 1996 (De, Khera, Samson and Kumar, 2011). Similarly, despite the breakthroughs in the strengthening of the legal framework to provide equitable access to primary education, enforcing these legal provisions remains a major challenge. There exists a mix of progress and problems in every facet of educational development in India today. The education sector has made a sudden and immense progress in enabling almost universal access to primary schooling. However, the development in quality aspects of schooling has not kept pace with access. This widening gap between access and quality, if not filled in time, can possibly reverse the developments made so far.

There is wide variation across states in having achieved standard quality indicators – both tangible (infrastructure, student-teacher and student-classroom ratios, teaching-learning materials, etc.) and intangible (quality of teachers, interpretation of curriculum, relevance of curriculum, etc.). The following sections describing the educational contexts of District Morigaon and District Medak are reflective of many such inconsistencies in educational achievement.

[2] Further discussed in Section 4

3. CONTEXT OF PRIMARY EDUCATION IN MEDAK AND MORIGAON

3.1 Overview of District Morigaon and District Medak

Morigaon district is the second smallest district of Assam (District Education Report, 2013) and is spread over an area of 1551 km^2 (Census, 2011). According to the Census, 2011, Morigaon has a population of 957,853 of which approximately 49% is female. The sex ratio stands at 967 females per 1000 males (Census, 2011). The average adult literacy rate stands at 69.37%, of which women constitute 64.99% (Census 2011). Although less than 100 kms from the capital city of Dispur, Morigaon is predominantly rural with over 92% of the population living in areas designated as rural (Census 2011).

Table 1: Descriptive indicators for District Morigaon and District Medak

Description	Morigaon	Medak
Area (km^2)	1551	9699
Total population	957853	3033288
Population density/km^2	617	313
% female population	49%	49.79%
Sex ratio (per 1000 male)	967	952
Total Adult literacy rate (%)	69.3%	61.52%
Female literacy rate (%)	64.99%	51.37%
Distance from the state capital (kms)	<100 kms	<80 kms
% urban population	7.66%	24%

(Census of India, 2011)

Medak district is considered one of the "educationally backward" districts of Andhra Pradesh ranking 20th among the state's 23 districts on educational attainment (Government of AP, 2007). According to the 2011 Census report, the district is spread over an area of 9699 km^2 with a total population of 3,033,288. Females make 49.79% of this population and the sex ratio in the district is 952 per 1000 live male births (Census 2011). As per the census report, adult literacy stands at 61.52% with females constituting 51.37% of its share. The district is less than 100 kms from the capital city of Hyderabad with approximately 76% of the population living in rural areas (Census, 2011).

With regards to climatic conditions, Morigaon district experiences sub-tropical weather which is hot and humid in the summer and cold and dry in the winter. It experiences heavy rainfall with the average annual rainfall recording between 1500mm and 2600mm (Morigaon portal, 2013). The humidity levels are usually recorded at 80% (District Education Report, 2013). Almost every year, during monsoons, most of the district areas get flooded (Morigaon District Government, 2013). This is a major deterrent to development and livelihood activities in the region. Agriculture is the chief source of livelihood for the people of Morigaon (District Education Report, 2013). For Department of Education's administration purposes, Morigaon is divided into four blocks – Laharighat, Kapili, Mayong and Bhurbandha. Even though within close proximity of each other, each block is distinct in its demographic and geographical profile. These factors have a bearing on the educational profile of each block.

The geographical context of Medak is very different from Morigaon. The region experiences a semi-arid tropical climate with persistent drought, unpredictable weather, limited and erratic rainfall. The temperatures range from 46 degrees Celsius in summers to 6 degrees in winters. The predominant section of the population is traditional farmers and agricultural laborers cultivating *jowar*, paddy, groundnut, chillies, tomato, cotton and wheat. For educational administration, Medak is divided into four divisions – Jogipet, Siddipet, Medak, and Sangareddy. These divisions are further broken down to the level of *mandals;* there are 46 mandals in the district. Given that the district is fairly large in its geographic spread, different parts of the district are characterized by their own specific demographic profile, urbanization level and climatic conditions.

3.2 Human Development Indices for the two sites

As per the Human Development Indices for Morigaon and Medak (Table 2) reported by their respective governments, Medak seems to be performing better than Morigaon overall. In particular, Morigaon is lagging far behind Medak on the health dimension. On education index, there does not seem to be a significant difference between the two districts. However, as indicated in Table 2 on education indicators in the two districts, this comparison is likely to have changed over the last decade since the HDI indices were estimated.

Table 2: Indices of Human Development for District Morigaon and District Medak

Indices of Human Development	Morigaon (2001)	Medak (2003)
Human development index (HDI) value	0.494	0.550
Income index	0.562	0.461
Education index	0.551	0.523
Health index	0.371	0.667

(Govt. of Assam, 2003; Govt. of Andhra Pradesh, 2007)

However, it is important to note that while Morigaon ranked among the top five districts within the state on HDI indices, Medak ranked in the bottom five (Govt. of Assam, 2003; Govt. of Andhra Pradesh, 2007). This also indicates the relative performance of the entire states on HDI indicators. However, according the recent Economic Survey of India, both Assam and Andhra Pradesh are among the low HDI states of the country with their values estimated at 0.444 and 0.473 respectively (Ministry of Finance, 2011).

3.3 Specific education performance indicators

As evident from Table 3, Medak seems to have been performing significantly better than Morigaon on almost all of the specified indicators with the exception of 'Net Enrollment Rate' and 'Access to Drinking Water'. However both the districts point to the extremely low rates of retention through primary school, with Morigaon at 60.2% and Medak at 69.5%. Similar to the trend revealed in Table 2 on HDI values for the two districts in relation to their respective State, Morigaon lies above the mean education figures in Assam while Medak falls far below several mean education statistics in AP. However, both the districts house a relatively higher proportion of primary school drop-outs in their states. Low retention and high incidence of school drop-outs become evident in the large disparity in net and gross enrollment rates,

particularly in Morigaon. However, among the students that manage to attend school till grade 5, a fairly high percentage is able to progress to upper primary levels.

Table 3: Key education indicators from District Morigaon and District Medak

Key education indicators	Assam	Morigaon	AP	Medak
Student-level indicators				
– Primary enrolment rate, gross	136.1%	168.3%*	107%	120.6%*
– Primary enrolment rate, net	NA	100.0%*	85.7%	95.3%*
– Transition rate from primary school to UP school	88.7%	93.6%	93.3%	95.1%
– Retention rate	53.38%	60.2%	85.26%	69.5%
– Primary drop-out rate	11.7%	13.7%	6.2%	6.9%
School-level indicators				
– % primary schools with single teachers	20.5%	16.1%	11.7%	8.4%
– % primary schools with single classrooms	31.6%	30.4%	31.1%	22.3%
– Pupil teacher ratio	33	45	24	25
– Student classroom ratio	33	41	25	26
– % primary schools with girls toilets	49%	66%	51.4%	67.6%
– % primary schools with drinking water	76.3%	85.1%	85.9%	75.7%
Teacher-level indicators				
– % primary teachers with education above 12+3 level	13.09%	15.7%	80.19%	78.81%
– % teachers with professional teaching certification	65%	42.5%	99.6%	96.3%
– % female teachers	34.9%	33.1%	50.9%	51.2%

(District and State Report Cards, DISE, 2011-12; *statistics from 2010-11)

Most school-level and teacher-level indicators reveal the relatively disadvantaged position of Morigaon compared to Medak. However, for both the districts these indicators reveal many causes of concern. With significant proportions of schools still run by single teachers and in single classrooms, Morigaon and Medak are far from ensuring the rights of a child to quality education as mandated in the Right to Education Act of 2009. A direct bearing of this situation is evident from in the unfavorable pupil-teacher and student-classroom ratio in Morigaon. An incredibly high percentage of schools still lack in providing its female students with separate toilets, and safe drinking water to its students and teachers. It is widely believed in the education sector across the developing world that absence of basic facilities like toilets and potable water is not only a health issue, but also one of the factors contributing to school dropout rate (Birdthistle, Dickson, Freeman, & Javidi, 2006; Amritha, 2013).

3.4 Key challenges to education in Morigaon and Medak

Several educational issues were observed with Morigaon and Medak during the team's several field visits, interactions with the parents, students, teachers, teacher trainers, and education functionaries, and review of district and state produced policy literature and statistics. As mentioned in the previous section, early school drop-out is reportedly one the major concerns of primary education in Morigaon. The main reasons are listed as early marriage in case of girls, to work as manual labor, to work in the fields and migration (Annual Work Plan and Budget, 2013). Additionally, annual floods damage schools when the rivers overflow during the monsoon season. During floods, schools are either damaged and submerged or used as refugee

camps for displaced villagers[3]. Rehabilitation process takes time and the education system faces a major setback.

In addition to the many environmental and household level hindrances, high school drop-out rates could also indicate the questionable efficacy of the education system that fails to prevent students from dropping out, if not contributing to it (MHRD, 1993). In analyzing the factors contributing to early school-dropout, literature on rural education in India makes several references to supply-side factors such as poor school infrastructure, distance to school, lack of drinking water and usable toilets, uninteresting and irrelevant curriculum, teacher shortage and absenteeism, fear of teachers, teacher-led discrimination, neglect by teachers, etc. (MHRD, 1993; Govindaraju and Venkatesan, 2010; Mukherjee, 2011). Table 3 outlines many such school-specific and teacher-specific indicators that seem to be performing poorly for the two districts. Problems related to teachers' behavior with students and as professionals mostly remain unreported due to the limitations of self-reporting mechanisms normally employed for studies with teachers on school drop-out (Govindaraju and Venkatesan, 2010). Nevertheless, it is not an unfounded assumption that what is taught, how it is taught, and where it is taught are relevant factors necessary to retaining children through the entire schooling phase.

Another challenge is the lack of adequate coordination between the various departments working for education in Morigaon. This, reportedly, leads to delays and halts the progress of educational programs and schemes[3]. In both the districts, there have been several instances of programs and schemes being discontinued before completing a specified term of implementation. Many innovative programs undertaken during the last two decades were stopped due to lack of funds, lack of adequate teachers, change in the ruling government and its priorities, etc[4].

Similar to Morigaon, schools in Medak have been seen to lack in proper infrastructure such as building, classrooms, toilets, playground, etc. Even though there are schools in tribal areas in Medak, there are constraints of language, localized teaching material and communication gap between students and teachers[5]. Related issues have been observed in certain parts of Morigaon district where Assamese teachers are often unable to communicate with Bengali speaking communities[3].

Monitoring mechanism of schools in Medak is underdeveloped which is made further difficult because of the large size of the district. As a result in the recent past, there have been numerous cases of non-availability or delayed supply of quality teaching material[5]. Reportedly, textbooks, stationary and other supplementary materials are often not supplied on time and in sufficient quantity. There is lack of sufficient and judicial use of TLM (teaching-learning material) grant and according to the recent news from the district the TLM grant has been

[3] Reported by parents and teachers during MDEP's field visits to schools in Morigaon, in December 2011 and June 2012.
[4] Reported by education functionaries during MDEP field visits to Morigaon and Medak in Dec 2011 and June 2012
[5] Reported by parents and teachers during MDEP's field visits to schools in Medak, in December 2011 and June 2012

cancelled in the proposed budget for the year 2013-14. Similar news has been received from Morigaon[6].

Overall, a combination of factors ranging from natural calamities such as floods and droughts, to school level deprivations such as lack adequate facilities and supplies, seem to work in tandem to keep the students and teachers from staying true to their intended goals of education. Lack of student and teacher motivation to attend school regularly has reportedly been a common observation of the community members and educational functionaries in both the districts[4].

4. CURRICULUM PLANNING AND DEVELOPMENT

Curriculum (what is taught) and Pedagogy (how it is taught) have always been challenging issues in the education history of India post-independence. It is only natural for it to be so owing to the immense diversity in the contexts, needs, and opportunities of the country's population. The existing forms of curricula and pedagogies in the country are a result of several programs and policies that took shape over the years, particularly after independence. The following three sections briefly describe the policy context in which curriculum is designed and implemented. It begins with a brief review of literature on curriculum policy to understand how policy influences the implementation of curriculum. It is followed by a historical review of the ideologies and its impact on successive national curriculum frameworks in India. Lastly, the third section outlines some of the key documented challenges faced by educators in understanding and practicing the existing primary curriculum in the two districts.

4.1 Curriculum and curriculum policy

Curriculum is an "institutional text," the purpose of which is to simplify the everyday functioning of an institution (Pinar, Reynolds, Slattery, and Taubman, 2008, p. 661). Curriculum policy is an initial stage (others being design, implementation, technology, supervision, and evaluation) of curriculum development (Pinar al, 2008). However, in practice, due to constant interactions and influences, these stages do not essentially follow a strict linear sequence. More formally, curriculum policy can be defined as "the formal body of law and regulation that pertains to what should be taught in schools" (Elmore and Sykes, 1992, cited in Pinar, et al., 2008, p. 666).

Policy, in general, is expected to set standards and procedures for different levels of organizational authority on how to deal with each other as well as with schools. Furthermore, it emphasizes the preferred ideology concerning the nature of knowledge and content that students should gain from schools. From a broader perspective, it also determines the relationship between the various stakeholders in education- be it within the classrooms or across the various departments of school governance and management.

[6] Recent district-level budget announcements in Morigaon and Medak have cancelled the TLM grant; reported by district-level staff of MDEP, CGC

There tends to be an 'inherent bureaucracy' of an institutional text that is influenced by the contextual systems ranging from schools to nations; their social, economic and political structure (Pinar, et al 2008). Hence in many ways curriculum policy on how schools operate, on how students and teachers interact, on how subject content is prioritized as well as on how they finance themselves, reflect the values of the existing social and political structure of that context (nations, state, etc.).

There are several varying perspectives on how curriculum policy influences its implementation. One view is that policies are often unrealistic and fail to account for the complexities inherent in teaching, so their influence on the actual practice is negative. Hence, many studies reveal a wide gap between the intended objective of the curriculum and the practiced version in classrooms (Wise, 1979). Another view of the policy-implementation relationship argues that policies are rooted in political ideologies that lead to "contradictions in control". The goal of improving school performance as measured in terms of students' scores and the goal for larger social and public purpose of education compete with each other and hinder the accomplishment of either of the two (McNeil, 1986). Alternatively, Lipsky (1980) finds that policy has little influence on actual practice and that teachers have a significant role in determining the daily experiences of many students. This view is supported by Elmore and Sykes (1992) report that for easy management a "teacher's coping mechanisms constitute the policy that governs access to knowledge" (cited in Pinar, et al., 2008, p. 668). Alternatively, attempting to provide a balanced view of how policy should relate with practice Shulman (1983) said "…policies are very much like laws and teachers like judges" (cited in Pinar, et al., 2008, p. 669). He supported the privilege of teachers to modify curricular content within the framework of necessary guidelines.

These analyses of policy implementation gap provide relevant literature context to the realities of curriculum and pedagogy in many developed and developing educational contexts.

4.2 Curriculum policy in India

Gandhi envisioned education as an instrument to awaken the country's integrity to injustice, inequality, and violence during the National Movement for independence in India. He recommended the use of local environment, community, and dialects to socialize the child in order to make him/her into a transformative agent. To actualize Gandhi's vision, successive National Commissions (1952-53, 1964-66) tried to imbibe his core educational philosophy which focused on national development (NCERT, 2005).

The National Policy for Education (NPE) of 1968 and the Curriculum Framework designed by the National Council of Education Research and Training (NCERT) in 1975 were made when education affairs were primarily handled by the state governments. However this changed in 1976 when education was listed as a concurrent subject and for the first time in 1986, a uniform National policy of education was structured which endeavored to make quality of school education comparable across the nation. This policy primarily emphasized on national integration without compromising the secular, multifarious aspect of the Indian society. Apart from this, it stressed upon the importance of identifying individual competencies and values to

be fostered at various stages. Concurrently, NCERT made efforts to conduct studies and organize consultations and as result, drafted the National Curriculum Framework (NCF) of 1988. Post implementation, during the Yashpal Committee Review, it was realized that when NCF-1988 was converted into a course of studies and textbooks, it resulted in an increase in the load of curriculum and made learning stressful (GOI, 1993). Upon the recommendations listed in the Yashpal Committee Report (Learning Without Burden) and drawing from the lessons learned from NCF-1988, the national curriculum was completely reworked in 2000. The NCF-2000 drew severe criticism from educationists and social activists for re-writing history textbooks which overemphasized majoritarian perspectives and culture as the primary ideology of the nation (Kumar, 2012). Following several public discourses, debates, academic and policy consultations, NCF was redesigned in 2005.

NCF 2005 takes into account various interconnected aspects of educating children in India such as aims of education, the socio-cultural contexts of children, the nature of knowledge, and the principles and processes of human development and learning (NCERT, 2005). NCF 2005 proposes five guiding principles for curriculum development:

> "… (i) connecting knowledge to life outside the school; (ii) ensuring that learning shifts away from rote methods; (iii) enriching the curriculum so that it goes beyond textbooks; (iv) making examinations more flexible and integrating them with classroom life; (v) nurturing an overriding identity informed by caring concerns within the democratic polity of the country" (NCERT, 2005, p. viii).

The policy document also clarifies that the NCF does not intend to propose standardization. It echoes the principles outlined under NPE 1986 that, "the National System of Education will be based on a national curricular framework, which contains a common core along with other components that are flexible" (NPE, 1986, p. 5). NPE envisages the framework as a "means of evolving a national system of education capable of responding to India's diversity of geographical and cultural milieus while ensuring a common core of values along with academic components" (NCERT, 2005, p. 4).

NCF 2005 emphasizes that all pedagogic efforts which includes- the creation of syllabi and textbooks for the primary classes should be planned keeping in mind the core values of Early Childhood Care and Education (ECCE). It also discusses the nature of knowledge and children's own strategies of learning as a theoretical basis of the suggestion it makes. It proposes that teaching should aim at "enhancing children's natural desire and strategies to learn" and that "knowledge should be distinguished from information" (p. viii). The document also advises on enabling children to learn and express themselves through a variety of activities and suggest systemic reforms in the school system – the manner in which physical setting is visualized and the quality standards defined (NCERT, 2005).

To encourage integrated knowledge, the NCF (2005) recommends the "softening" of distinctions between the four core subjects- Mathematics, Languages, Sciences, and Social Sciences. It also strongly insists on the revision of textbooks to make learning more child-friendly and contextually relevant. NCF pays special attention to the study and practice of arts

and crafts, health and physical education, and peace. It urges teachers to consistently explore new avenues, forms of knowledge and creativity. Testing and evaluation of learning is crucial and it critiques the previous existing system and criteria of examination which promoted rote-learning that created psychological pressure experienced by children and parents, as well as teachers who then adapt their teaching practices to reinforce rote learning (NCERT, 2005). To change this pattern of testing and evaluation, the Department of Education introduced a new policy titled Continuous and Comprehensive Evaluation (CCE) for evaluating student learning. This policy endeavors at supporting a continuous all-year round evaluation of a child's progress in schools. This process ensures that remedial support, if required, is given to a student throughout the year instead of the end of academic year. CCE was primarily planned for secondary schools; however, it has permeated to the lower grades and the new and revised textbooks are designed to allow for continuous evaluations of the multiplicity of skills and knowledge acquired by a student in a year. If implemented properly this method is expected to make teaching-learning more activity-based and individualized to the needs and the pace of students.

With the ratification of the Right to Education Act, NCF 2005 is no longer an advisory policy document. Under Section 7(6a), the central government has to develop a framework of national curriculum with the help of academic authorities of state governments (MHRD, 2013). This is crucial as the earlier practice of the NCERT preparing the NCF was of an advisory nature. Under the Act, NCF 2005 became mandatory till the central government in consultation with the state governments drafted a new framework in 2009 (MHRD, 2013). RTE resonates with NCF 2005 in requiring the education authorities to develop curricula and evaluation procedures in accordance with the values enshrined in the constitution. RTE emphasizes the need for the curricula and evaluation methods to ensure the "all-round development of the child", "building up the child's knowledge, potentiality and talent" and "making the child free of fear, trauma and anxiety" through a system of "child friendly and child centered" learning (Ministry of Law and Justice, 2009, p. 9). Reinforced by this development, NCF is making tougher impressions on the various state education departments that have begun formalizing State Curriculum Framework based on the principles underlying NCF and RTE.

4.3 Existing challenges for curricular policies and practices in rural India

In a SCERT-led review of local needs of primary education in Assam it was found that the local textbooks and the teaching-learning methods were "not suitable for children of all sections of society", "not local specific", "not related to day-to-day life" of the students and teachers, and "not helpful in elevating the poor class in the long run" (SCERT-Assam, 2010, p.7). Over 70% of the Indian population lives in villages (Census, 2011). Lack of compatibility between the assigned textbooks and teacher training methods with the reality of students and the abilities of the teachers has been a common reporting from the two research sites. As evident from Table 3, significant proportions of schools are run in single rooms and by single teachers. This reality is often not taken into account in designing the curricular and pedagogic practices in the villages.

This concern is shared by the rest of the country and has been addressed in the National Curriculum Framework of 2005 as an important consideration in revising the textbooks and teaching methods at the State level (NCERT, 2005).

In Morigaon, over 92%, and in Medak, over 76% of the population has a rural background. Schools in rural India tend to have certain characteristic features that differentiate them from urban schools. To begin with, it is widely acknowledged that the socio-economic conditions in the villages constrain the access, delivery and quality of primary education in India (Azim Premji Foundation, 2004). Children in rural schools, in comparison to those in towns and in cities, have fewer out-of-school opportunities to complement and supplement learning in school. Many of them coming from relatively poorer and lesser literate households are disadvantaged in relation with those in the cities (Azim Premji Foundation, 2004). Furthermore, social inequalities of caste, class and gender have a direct relationship with the experiences of school-age children in India, more particularly in the villages (Dreze, 2003; Kabeer, 2006). Textbooks and teaching methods that are often conceived in the cities, more commonly by urban residents, have been reported to lack relevance to rural students, more so if they are first-generation learners.

High drop-out rates are reported from each of the two research sites. According to the Yashpal Committee Report of 1993, the issue of school drop-out has "one of its origins in the curriculum scenario" of the country (MHRD, 1993, p. 11). The report argues that a curriculum policy that fails to provide its students "elements of joy and enquiry from learning" contributes to the rate at which students leave school before completion. Socio-economic disadvantages further add to the pressures students face to continue with school. It further points out to the urban bias in textbooks that weakens the child's association with his or her life and experience at schools (ibid).

5. STUDY RATIONALE AND OBJECTIVES

In practice, the National Curriculum Framework is widely consulted for designing textbooks, teacher trainings, and teaching-learning materials. Several states of the country have used NCF to draft their local State Curriculum Framework that contextualizes NCF to their local needs and opportunities. Others are still using the NCF with the aim of moving towards developing their state-level guidelines and strategies. Although NCF-2005 proposes integrated reforms to allow for simultaneous and interrelated development of curriculum and pedagogy, the gaps between the two continue to exist. Preliminary findings from the project's interaction with relevant stakeholders in the two MDEP sites reveal a major disconnect between the policy and implementation of curricular reforms at the state and sub-state level.

In both Assam and AP, pedagogic practices and the processes of teacher training are not consistent with the expectations laid out by their relative curricula. While significant attempts have been made in both the states to revise the textbooks and provide necessary pre-service and in-service teacher trainings, a number of local policy and administrative hurdles diminish the quality of curriculum and pedagogy as it travels from policy makers in New Delhi to the schools in villages. This observation finds support in literature on education policy globally.

Literature on education policy shows that while on one hand we may consider policy as something 'officially authorized', backed by enforcement mechanisms of government or corporate charter, on the other, policy may also develop in more spontaneous and informal fashion, outside the agencies or offices that are constitutionally charged with making policy (Sutton and Levinson, 2001). Levinson et al (2009) encourage policy researchers to look beyond the text and question the "naturalness and normalcy" of policy. They argue that an important antecedent to any policy process is not just what some have identified as the definition of a problem, but also the political will of the players involved.

In order to understand the 'problem' and the 'willingness' to deal with it, from multiple perspectives, CGC|SA decided to research the most dominant and visible aspect of the existing curricula and pedagogy in India – the textbooks. Although, the National Curriculum Framework (NCERT, 2005) of India insists repeatedly that curriculum planning is a much wider process than the traditional practice of confining it to just textbooks, in practice textbooks remain the most popular medium of transacting curriculum in Indian schools today.

After several discussions, review of literature, and focus groups with teachers and policy makers from Assam and AP, we arrived at the following two research questions:

- What are some of the prevalent issues pertaining to curricular policies and practices in public primary schools of rural Assam and Andhra Pradesh?
- In what ways can textbooks better support teaching-learning processes in public primary schools of rural Assam and Andhra Pradesh?

To guide this research, the following three research objectives were identified:

4. To understand the role of textbooks in the existing curricular approach at schools
5. To examine the nature of alignment between textbooks, and teacher training and student learning in Assam and AP
6. To understand ways in which textbooks can better support teaching learning processes at schools

6. METHODOLOGY

6.1 Study Design

The study used a mixed-method design, combining qualitative data from individual and focus group interviews and observations with a cross-sectional survey of a random sample of 789 primary school teachers in the two districts. To refine the development of research questions that were relevant to all stakeholders and amenable to intervention, the project team initially completed extensive field work in the two study districts. This phase of the study involved in-depth interviews with key public education functionaries at the block, district and state levels and individual and focus group interviews with head masters; teachers and teacher trainers; School Management Committees; and parents of primary school children.

We also observed classrooms and other activities and assessed school- and community-based education facilities and infrastructure in villages throughout the two districts and consulted with national level policy makers and education scholars. Based on findings from these data, the MDEP team decided to focus its Year 1 activities on two core areas of public primary education—textbooks and teacher training. These two dominant themes represent the chief instruments of curriculum development, delivery, management and evaluation and are therefore central to any effort to improve the quality of education.

The purpose of the survey was to assess teachers' use and evaluation of: (1) Standard SCERT/NCERT textbooks in the four core curricular areas of primary education, i.e., native language, English, Mathematics and Environmental Science (EVS), and (2) Teacher training opportunities in their respective districts.

6.2 Ethics

District and state level administrators granted permission to conduct the research. The study was approved by the Teachers College, Columbia University Institutional Review Board.

6.3 Study Sites

The study was conducted simultaneously in two districts – Morigaon in the state of Assam and Medak in the state of Andhra Pradesh. Details of the two districts and the context of primary education in each district are described above. At the point of entry, the two districts had been serving as a site for the Columbia Global Center's Model Districts Health Project for one year. The Health project focuses on maternal and child health, and co-locating the primary education project in these districts enabled us to build on existing relationships and to begin to develop synergies between the high-priority, interconnected fields of health and education in India's development agenda. The two sites vary on important dimensions relevant to public primary education, e.g., size, tribal populations, urban vs. rural population and socioeconomic status and resources.

6.4 Target Population and Data Sources

The study targeted three stakeholder groups in lower public primary education. Table 4 summarizes the type and distribution of data collected from each group.

Table 4: Summary of data sources

Target Group	Focus Groups	Interviews	Survey
Teachers			
• Medak	n= 6-10 (8 groups)		n=418
• Morigaon	n= 6-10 (4 groups)		n=371
Mandal/Cluster Resource Persons			
• Medak	n= 6-10 (4 groups)		
• Morigaon	n= 6-10 (4 groups)		
Education functionaries at SSA			
• Medak		n=1	
• Hyderabad (AP state office)		n=1	
• Morigaon		n=1	
• Guwahati (Assam state office)		n=0*	
Education functionaries at DIET			
• Medak		n=1	
• Morigaon		n=1	
Education functionaries at SCERT			
• Medak/Andhra Pradesh			
– SCERT, Director		n=1	
– SCERT, Curriculum Department, Head		n=1	
– SCERT, Teacher Training, Head		n=1	
– SCERT, Mathematics Coordinator		n=1	
– SCERT, English Coordinator		n=0*	
– SCERT, Regional Languages Coordinator		n=1	
– SCERT, Environmental Science Coordinator		n=1	
• Morigaon/Assam			
– SCERT, Director		n=0*	
– SCERT, Curriculum Department, Head		n=1	
– SCERT, Teacher Training, Head		n=1	
– SCERT, Mathematics Coordinator		n=0*	
– SCERT, English Coordinator		n=1	
– SCERT, Regional Languages Coordinator		n=1	
– SCERT, Environmental Science Coordinator		n=1	
TOTAL	**n=157, 20 groups**	**n=16**	**n=789**

Interview request declined

6.4.1 Focus Group Discussions

A total of 20 focus group discussions (FGDs), each comprising 8-10 participants, were carried out in the two sites. Two groups of participants were targeted – Teachers and Cluster / Mandal level Resource Coordinators. In Morigaon, eight FGDs were held, one with each respondent group in each of the four educational blocks. To accommodate the larger teacher population in Medak, 12 FGDs were held. Two were organized in each of the four educational divisions for teachers, along with 1 FGD in each division for resource persons. Approximately 8-10 individuals participated in each FGD.

All FGDs were conducted in the local language by trained, experienced researchers. Questions used to guide the discussions centered on the challenges faced by teachers and resource persons with regards to the existing textbooks and teacher training opportunities and are presented in Appendix 1.2. Block Resource Coordinators announced the FGDs to teachers and

resource persons, who then volunteered to participate. No remuneration was provided. Most FGDs were held in Block-level education offices; a few were held at schools. With informed consent, sessions were audio-recorded for verbatim transcription / translation.

Using an interactive Microsoft excel sheet, we drew on both "pre-determined" and "emergent" coding strategies (Izzo, 2006, p. 67).With respect to the former, we used a set of pre-determined codes to organize transcribed text in accord with the main research questions; a more detailed set of codes and sub-codes then emerged in successive rounds of coding. After coding 4 FGD and 5 in-depth interview transcripts, we developed and refined a more comprehensive coding scheme that included attributes that could be used to sort data and examine it for themes and patterns, e.g., data collection site, respondent characteristics, response nature (recommendation, complaint, anecdote, etc.), and curricular subject.

6.4.2 Key Informant Interviews

To ensure representation of all relevant positions, we sought to interview key personnel in education departments from state to district levels. Key informants were nominated from three relevant offices: (a) Sarva Shiksha Abhiyan (SSA) / Rajiv Vidya Mission (RVM) at the District and State Levels, (b) DIET offices in each district, and (c) SCERT offices at the state level. We requested 20 interviews; four were declined. Of the 16 completed, nine were in Medak and Andhra Pradesh and seven were in Morigaon and Assam. Interviews were semi-structured and designed to elicit information on:

- Perceived role and relevance of textbooks within the wider curriculum approach
- Common challenges pertaining the use of textbooks in the region
- Institutional role in designing textbooks and TLMs at the State and District levels
- Process of designing textbooks

Interview schedules were further tailored to the category of respondent (Appendix 1.1). Almost all interviews were conducted in English, but transcribing, coding and analyzing processes were basically the same as those used in the FGDs. Table 4 shows the type and distribution of interviews.

6.4.3 Survey

The unit of analysis for the survey was teachers. All who were employed in lower primary or lower/upper primary schools and who had taught at least one of the four core subjects in grades 1 – 5 during the last 5 years were eligible to participate. The 2010-2011 DISE data show 6,354 eligible teachers in Medak and 2,119 in Morigaon.[7] Because it was not feasible to compile a sampling frame of all teachers, we used a two-stage selection strategy. We first established the number of teachers to be sampled per district, and then allocated this number proportionately among the two districts' respective educational divisions.

[7] The reliability of DISE data are routinely examined in Post-Enumeration Surveys (PES). The PES report for 2010-2011 data found no significant deviations in the DISE and PES surveys in Assam. Andhra Pradesh was not assessed in the 2010-2011 report, but the overall deviation of data on all comparable items in 2011-2012 was 7.32% -- within the 10% range of permissible percentage of deviation.

Stage1: Sample Size and Power Analysis

We used the online sampling calculator Raosoft to determine the desired sample size. With a 95% confidence level and 5% error rate, the target was 400 respondents in Medak and 300 in Morigaon. A 5% oversample was added to allow for refusals and non-completers. Finally, we used G*Power 3.1.5 to confirm the adequacy of this sample size for total sample and for subgroup analyses. For an OLS regression with 20 predictors, a medium effect size of .15 and an objective to detect a predictor that accounts for at least 5% of unique variance in an outcome, the sample size to achieve power of 0.80 is 157; for 10 predictors a sample size of 118 is required. The projected sample size was thus deemed more than adequate.

Stage 2: Sample Allocation

Figures 1 and 2 show how the sample was allocated among educational divisions in Medak and Morigaon respectively. Medak has four administrative zones, each divided into sub-units referred to as mandals. Morigaon has four blocks, subdivided into clusters. The 2010-2011 DISE data showed 2,662 eligible schools in Medak and 1,856 eligible schools in Morigaon.

To illustrate the sampling process in Medak, the 2,662 eligible schools are distributed in 46 mandals within the four zones. As these units are of unequal size, we used a probability proportionate to size (PPS) selection strategy to create a self-weighted sample based on the proportional distribution of schools in the target population. Specifically, we divided number of schools in each mandal by the total number of schools to be selected in the district, and then used these weights to determine the number of teachers to recruit from each mandal.

For example, there are 42 eligible schools in Alladurg mandal. The probability of selecting one from the 2,662 study-eligible schools in Medak is .016 and the number of teachers to be selected from the mandal is 6 (400 * .016). We used a random number generator to select schools sequentially, with a plan to continue random selection until we reached the target number of teachers in the mandal. However, due to wide geographic dispersal of schools, a relatively small number of schools in each of the 46 mandals in Medak and 63 clusters in Morigaon, and the limited number of eligible teachers in many schools, it proved far more practical to invite all eligible teachers in each randomly selected school to participate. The final sample included at least the targeted number of teachers per school.

Figure 1: Sample allocation in Medak District, Andhra Pradesh

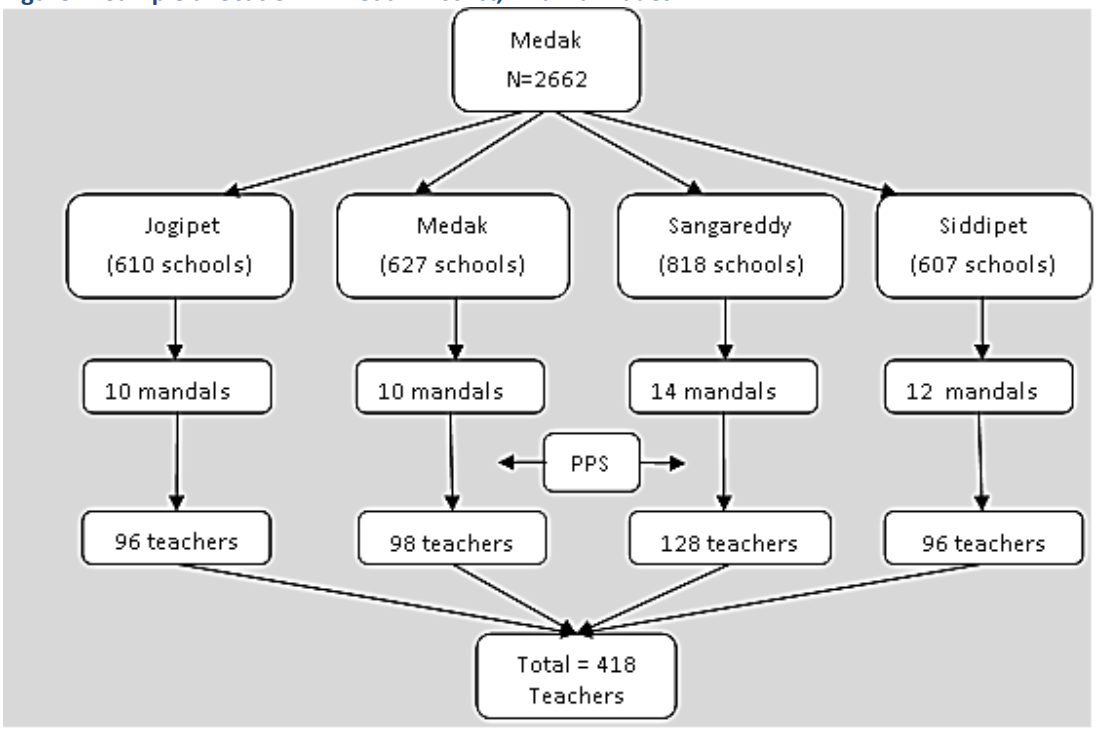
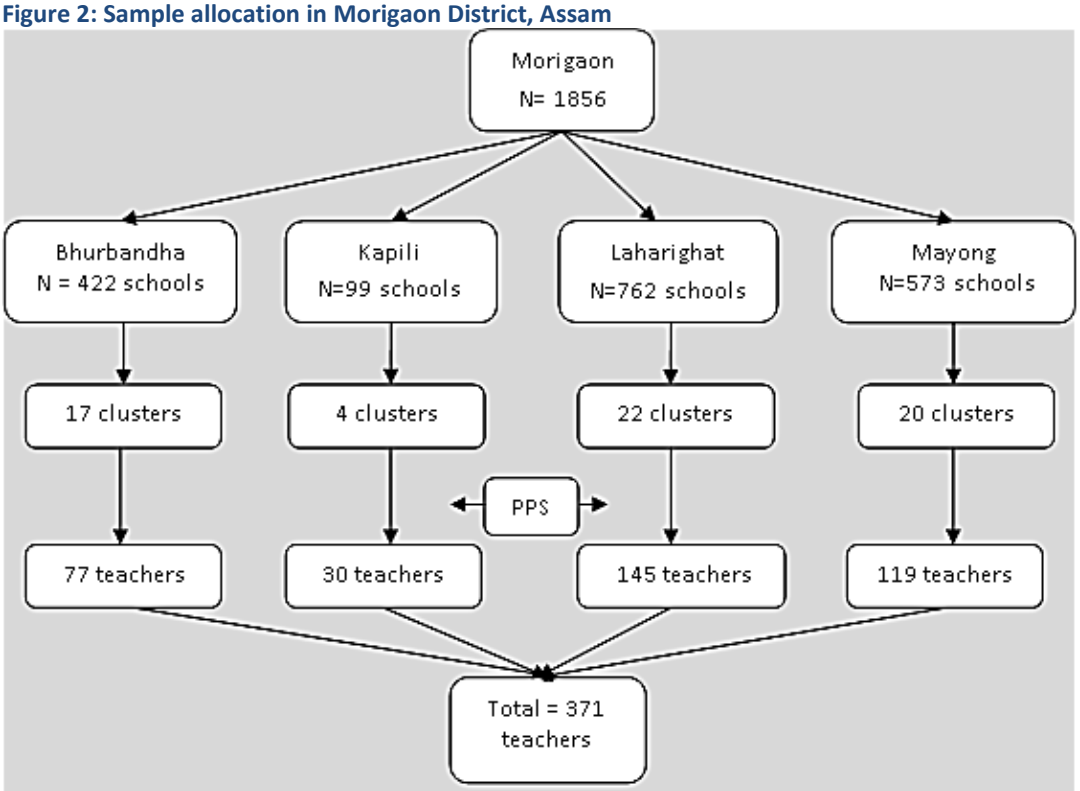


Figure 2: Sample allocation in Morigaon District, Assam



6.5 Data Collection

Local research teams were hired and trained to conduct the surveys with teachers. To ensure anonymity, no identifying information was collected on survey instruments and care was taken to safeguard the privacy of consent forms and study documents. A total of 789 surveys were distributed to the sampled teachers and they were given the option to complete the instrument and return it immediately or submit it when the researcher revisited their school 2-3 days later. The final response rate was 100%.

Translation

Bilingual research assistants from the same communities as the study population translated the instrument from English to Assamese (Morigaon) or Telugu (Medak). Four experienced professionals, including two university professors in Morigaon and two senior educators in Medak then back-translated the instrument to English. Based on their discussion and the incorporation of information from pilot studies in each district, the research team reconciled minor inconsistencies and adjusted the instrument accordingly.

Instrumentation

The survey instrument comprised three sections (Appendix 1.3). Section 1 asked about socio-demographic characteristics and included a brief set of items on teaching experience and satisfaction with the job and with the profession. Section 2 requested information on teachers' experiences with and evaluations of textbooks and Section 3 asked similar questions about in-service teacher training. Sections 2 and 3 had Likert-type response formats (1 = Strongly agree; 2 = Agree; 3 = Disagree; 4 = Strongly Disagree) and an open-ended option for comments.

In Section 2, 18 items asked respondents to report on their use of and satisfaction with SCERT textbooks in each core area of the primary school curriculum in which they had taught in prior five years. As noted, these areas are native language (Assamese or Telugu); English, Mathematics and Environmental Science. Language items include teachers' ratings of their confidence in teaching speaking, writing and reading skills. Section 3 consists of 31 questions which evaluate the effectiveness of various domains of in-service teacher training in the district.

Pilot Studies

Pilot studies were conducted with 20 primary school teachers in each Model District. The purpose of the pilots was to test and solicit feedback and suggestions on the data collection instrument and its administration. Participants suggested several minor changes in wording to make the instrument more locally sensitive, comprehensible and reliable. A few recommended changes applied to both districts while others were district-specific. For example, a participant in Assam recommended a formatting change to break the repetition in the survey and improve comprehension, which applied to both sites. Participants in both sites also recommended yes/no responses instead of a Likert scale format. We decided to retain the latter format in hopes of achieving more variation, but ultimately found little change. Participants in both sites also urged us to administer the survey in the native language and neither site expressed a preference for one method of distributing and collecting the surveys over others. On average, participants finished the survey instrument in about 30 minutes.

7. FINDINGS

7.1 Descriptive and analytical statistics

Univariate statistics were used to describe the sample and to inspect distributional properties of the measures; measures which violate assumptions of statistical models used for inference and parameter estimation were transformed accordingly. Based on theoretical considerations and bivariate analyses, we developed multivariate models. Ordinary least squares regression was used to examine continuous outcome measures and logistic models for dichotomous outcomes.

Missing Data: The variable 'Relat to PTA' has 6. 7% missing data; all others have fewer than 5 % missing data.

Table 5 presents a description of the study sample. A clear majority of respondents, nearly two-thirds in both sites, were male. Teachers in Morigaon were significantly older and had more years of teaching experience than those in Medak. Morigaon teachers also had far lower levels of formal education and teacher training—about one-third had completed only 10th standard, the same proportion as held a Master's degree in education in Medak.

This significant gap is also reflected in levels of training to be an educator. Between one quarter and one third of respondents in both districts were qualified TET teachers[8].

Table 5: Demographic and Background Characteristics N (%) or M (SD) (N=789)

Variable	Medak	Morigaon	Total	Significant Test
Gender				
Male	249(62.6)	224(60.4)	473(61.5)	NS
Female	149(37.4)	147(39.6)	296(38.5)	
Age	38.0 (8.6)	43.5(10.8)	40.7(10.1)	t = 17.76; df = 758, p < .001
Education				
Class 10	0(0.0)	123(33.2)	123(15.6)	X^2 =274.86; df =3; p < .000
Class 12 / diploma	75(18.1)	135(36.4)	210(26.7)	
Bachelor	206(49.6)	100(27.0)	306(38.9)	
Master or higher	134(32.3)	13 (3.5)	147(18.7)	
Teacher training				
Diploma education	120(28.9)	68 (18.3)	188(23.9)	X^2 =498.1; df = 3; p < .000
BA/MA Education	272(65.5)	8 (2.2)	280(35.6)	
Other	22(5.3)	179 (48.2)	201(25.6)	
None	1 (0.1)	116 (31.3)	117 (14.9)	

[8] Teachers recruited after qualifying Teaching Eligibility Test (TET) are called TET teachers. While this practice of recruitment existed in Andhra Pradesh since 2008, it was recently instituted in Assam in 2012.

Study-eligible teachers were required to have taught in Class 1-5 during the previous 5 years. As seen in Table 6, nearly twice the percentage of Medak teachers had taught in multi-grade classrooms, which is also reflected in their lower likelihood of teaching single grades.

Table 6: Grade level(s) taught in last 5 years

	Medak	Morigaon	Total*	Significance Test
Class 1	104 (24.9)	156(42.0)	260 (33.0)	X =27.64; df=1; p <.001
Class 2	103 (24.6)	145 (39.1)	248 (31.4)	X =19.02; df=1; p <.001
Class 3	106 (25.4)	128 (34.5)	234 (29.7)	X = 7.88; df = 1; p <.01
Class 4	106 (25.4)	122 (32.9)	228 (28.9)	X =5.42; df =1; p = .01
Class 5	126 (30.1)	151 (40.7)	277 (35.1)	X= 9.62; df = 1; p <.01
Multi-grade	229 (54.8)	97 (26.1)	326 (41.3)	X=66.49; df =1; p <.001
Other grade	4 (1.0)	1 (0.3)	5 (0.6)	NS

* Totals do not sum to 100 % as teachers may have taught more than one grade level

At least four of every five teachers reported teaching core courses in the primary school curriculum in both sites (Table 7). A significantly greater percentage of those in Morigaon reported teaching English and subjects other than the core.

Table 7: Subject areas taught last in 5 years

Taught courses	Medak	Morigaon	Total*	Significance Test
Native language	375 (89.7)	351 (94.6)	726 (92.2)	NS
English	345 (82.5)	330 (88.9)	675 (85.6)	M= 6.54; df=1; p <.01
Maths	365 (87.5)	329 (88.7)	694 (88.0)	NS
Environmental Science	339 (81.7)	324 (87.3)	663(84.0)	NS
Other subject	20 (4.8)	46 (12.4)	66(8.4)	M=14.55; df = 1; p <.001

* Totals do not sum to 100 % as teachers may have taught in more than one subject area.

Finally, to better understand their experiences in the profession, we asked participants about their sources of motivation for becoming a teacher and level of satisfaction with the job (Table 8). The most cited reason for choosing the profession, particularly in Medak, was the desire to contribute to society. Sizeable subgroups at both sites reported having been influenced by a teacher or being drawn to the profession by their potential to be a good teacher. Respondents were quite satisfied with their jobs, although more so in Medak; a full 90% said that they would recommend the profession to others.

Table 8: Motivation and satisfaction related with teaching as a job, N (%) or M (SD)

	Medak	Morigaon	Total	Significance
Motivation to be teacher				
– Teacher in their life	162 (38.8)	138 (37.2)	300 (38.0)	NS
– Needed job	7 (1.7)	6 (1.6)	13 (1.6)	NS
– Friend/family teach	48 (11.5)	43(11.6)	91 (11.5)	NS
– Felt I had potential	118(28.2)	94(25.3)	212 (26.9)	NS
– Job security	50 (12.0)	41 (11.1)	91 (11.5)	NS
– Contribute society	233 (55.7)	97 (26.1)	330 (41.8)	X^2=70.8; df=1;p<.001
– Other reason	5 (1.2)	2 (0.5)	7 (0.9)	NS
Satisfaction with teaching				
– Very satisfied	311 (74.6)	258 (69.9)	569 (72.4)	
– Somewhat satisfied	81 (19.4)	107 (29.0)	188 (23.9)	X =21.1; df=3;p<.001
– Somewhat or very dissatisfied	25 (6.0)	4 (1.1)	29 (3.7)	
Would recommend teaching to others	360 (92.5)	309 (92.8)	669 (92.7)	NS

Turning attention to the main research questions, we asked teachers to report on their experiences with SCERT/NCERT textbooks in their districts.

Curriculum: Textbook Assessment

To elicit teachers' experience and assessment of textbooks for the four core subject areas, we posed a series of questions that tapped dimensions of training and competence in use; design and accuracy; use of supplements or alternatives; appropriateness and sensitivity to local culture; and assurance of equal learning opportunities for all. Teachers responded to this same set of questions for each core course which they had taught in the past 5 years. Those who had taught Mathematics and/or Environmental Science were asked to rate their confidence in teaching these subjects, while those who had taught a native language or English rated their confidence in teaching students to speak, read, and write the language. To begin, we recoded negatively worded items so that all statements were scored in the same direction. Lower scores indicate higher ratings. Table 9 reports the percentages of teachers who either strongly agreed or agreed with the statements about textbooks in the curricular areas and the average of ratings for each item and for each subject area.

Table 9: Teachers who strongly agree or agree with statements on textbooks (%)

		Assam	Telugu	English	Maths	EVS	Average
1a	I feel confident to teach the subject				91.2	96.5	93.9
1b	I am confident in my ability teaching speaking	98.0	99.0	67.1			88.0
1c	I am confident in my ability teaching writing	98.3	94.4	80.2			91.0
1d	I am confident in my ability teaching reading	98.3	97.3	80.8			92.1
2	The text is at right level for teachers	96.1	98.3	67.6	82.9	95.3	88.0
3	I can answer questions and explain to students	96.3	96.8	85.7	90.6	96.9	93.3
4	I need more training in teaching the course (R)	95.2	87.0	93.7	92.1	88.4	91.3
5	Teachers get enough training in using the text	72.9	85.4	48.9	62.9	61.9	66.4
6	The text is at the right level for students	78.9	91.5	37.7	67.3	90.3	73.1
7	The text is my main TLM	74.2	96.3	75.6	79.9	82.9	81.8
8	I organize my teaching around text	94.4	97.5	88.4	95.3	95.3	94.2
9	I feel pressured to complete the syllabus (R)	51.4	40.5	57.6	52.0	47.2	49.7
10	At least half of students succeed in the course	73.9	91.3	61.6	83.6	81.1	78.3
11	The text does not address diversity (R)	56.7	42.5	68.9	47.2	39.1	50.9
12	There are factual errors in text (R)	58.4	27.1	41.3	40.6	30.5	39.6
13	There are other errors in text, grammar etc.(R)	68.2	22.6	35.4	42.6	34.5	40.7
14	The examples etc. are sensitive to context	94.7	93.7	65.9	66.2	90.7	82.2
15	The text is sensitive to differences, e.g., gender	94.9	87.5	73.3	60.9	90.2	81.4
16	I routinely use other TLM	96.1	96.5	90.5	96.0	95.8	95.0
17	I do not have time to develop my own TLM (R)	56.0	48.6	60.2	54.3	51.4	54.1
18	There is enough financial support for TLM	55.1	66.7	58.0	58.5	57.1	59.1
	Average	**80.4**	**78.0**	**66.9**	**70.2**	**73.6**	

(R) = Recoded

Looking first at subject areas, the most positive ratings were for the native language courses, followed by EVS, Mathematics and English. Regarding specific items, teachers were least likely to register concerns about errors in the textbooks and most likely to report using textbooks to organize their class and to routinely use other TLM. Teachers in Morigaon rated textbooks less favorably than teachers in Medak (t-tests of all subject areas, $p < .001$; not shown in table).

Table 10 compares the two districts on ratings of English, Maths and EVS. It compares the two study districts in terms of teachers' assessment of individual items within each of the three non-native language areas. Morigaon teachers' responses were lower in virtually every comparison where differences were significant. Also noteworthy, the strongest endorsement across subject areas at both sites concerned the need for additional trainings in teaching the course. Finally, teachers in both districts noted insufficient attention to diversity in English textbooks and not enough time to use other TLM, and to a bit lesser extent, financial support to develop their own TLM.

Table 10: Comparison of Study districts by Textbook Assessment Items and Subject Area (t-tests)

		English			Mathematics			Environmental Science		
		Medak	Morigaon	Sig	Medak	Morigaon	Sig	Medak	Morigaon	Sig
		M(SD)	M(SD)		M(SD)	M(SD)		M(SD)	M(SD)	
1a	I feel confident to teach the subject				1.5(.55)	1.9(.65)	***	1.4(.55)	1.7(.57)	***
1b	Confident in my ability teach speaking	2.0(.78)	2.3(.75)	***						
1c	Confident in my ability teach writing	1.9(.77)	2.1(.66)	**						
1d	Confident in my ability teach reading	1.8(.72)	2.1(.71)	***						
2	Text at right level for teachers	2.1(.81)	2.3(.71)	***	1.6(.58)	2.2(.68)	***	1.6(.61)	1.8(.54)	***
3	I can answer and explain to student	1.7(.60)	2.1(.64)	***	1.5(.55)	2.0(.61)	***	1.4(.53)	1.7(.55)	***
4	Need more trainings in teaching course (R)	3.5(.64)	3.4(.64)	NS	3.3(.70)	3.4(.60)	**	3.1(.73)	3.3(.59)	**
5	Teachers get enough training in text	2.4(.82)	2.6(.80)	***	2.0(.67)	2.6(.75)	***	2.0(.70)	2.6(.76)	***
6	Text right level for students	2.5(.84)	3.0(.76)	***	1.8(.62)	2.7(.75)	***	1.8(.60)	2.0(.59)	***
7	Text is my main TLM	2.1(.70)	2.2(.68)	NS	1.7(.55)	2.3(.77)	***	1.7(.54)	2.2(.71)	***
8	I organize my teaching around text	1.9(.55)	2.0(.56)	NS	1.7(.52)	1.8(.56)	***	1.8(.54)	1.8(.55)	NS
9	Pressure to complete syllabus (R)	2.6(.79)	2.7(.75)	NS	2.5(.85)	2.4(.71)	NS	2.5(.81)	2.5(.79)	NS
10	≥ half students succeed in course	2.3(.73)	2.3(.80)	NS	1.8(.59)	2.2(.61)	***	1.9(.62)	2.2(.72)	***
11	Text does not address diversity (R)	2.8(.85)	2.8(.73)	NS	2.3(.73)	2.7(.72)	***	2.3(.73)	2.5(.75)	***
12	Factual errors in text *	2.2(.74)	2.7(.75)	***	2.1(.71)	2.7(.66)	***	2.1(.64)	2.4(.70)	***
13	Other errors in text, grammar etc. (R)	2.1(.69)	2.5(.68)	***	2.0(.69)	2.8(.68)	***	2.0(.68)	2.6(.65)	***
14	Examples etc. sensitive to context	2.0(.72)	2.6(.76)	***	2.1(.70)	2.5(.74)	***	1.8(.56)	2.0(.55)	***
15	Text sensitive differences, gender etc.	2.1(.73)	2.2(.62)	**	2.3(.78)	2.3(.68)	NS	1.9(.67)	1.8(.55)	NS
16	I routinely use other TLM	1.8(.58)	2.0(.53)	**	1.6(.59)	1.8(.54)	***	1.7(.55)	1.9(.52)	***
17	Not time to develop own TLM (R)	2.6(.74)	2.7(.71)	NS	2.5(.72)	2.6(.81)	NS	2.5(.76)	2.6(.74)	NS
18	Enough financial support for TLM	2.2(.79)	2.6(.86)	***	2.2(.82)	2.5(.84)	***	2.2(.83)	2.5(.82)	***

(R) = Recoded * p ≤ .05; ** p ≤ .01; *** p ≤ .001

To summarize, teachers assessed textbooks for the native language courses they taught most favorably and textbooks for English courses least favorably. Overall, the chief use of texts was for organizing their class, but they also routinely used supplementary TLM. As with training, teachers in Morigaon rated textbooks less favorably than their peers in Medak for each subject area and also for each item in which the two sites significantly differed. Teachers in both site strongly endorsed the need for additional training in all courses in the curriculum.

7.2 Qualitative research findings

Findings from the data collected through key informant interviews and focus group discussions (FGDs) seem to resonate well with the statistical findings derived from teacher surveys in both the sites. The following is a brief summary of our qualitative data that we have organized around the key research questions posed by this study.

What is the role of textbooks in the existing curricular approach in schools of Morigaon and Medak?

- **Textbooks are "most important and accessible tools of education".** Almost every school going child and teacher owns textbooks. In villages, it is the most common tool for literacy at the household level. The general consensus most of the FGDs and interviews point towards is that textbooks are the most important tools through which education is 'transacted' in classrooms and teachers rely very heavily on them to get through their course load. To teach from the textbooks came across as a common understanding among the education administrators and the teachers; and the perceived expectation of the parents is also similar.

- **Textbooks are used as primary reference books for teaching in the classroom.** Most teachers do not see much difference between the textbooks and the curriculum. All the textbooks, at the end of each chapter, contain a brief section of guidelines on how to teach. Many teachers reportedly find that section very useful; however they do not always refer to that section as they are in a hurry to complete the syllabus on time to submit formal assessments. Hence, they teach from the textbooks in the same age-old "lecture method" they have been using for years. Many teachers and resource persons have expressed the need for training on the use of textbooks, particularly the new ones that have been designed to promote activity-based learning.

- **Textbooks may play a crucial role in determining teaching methods.** Textbooks in Assam and AP act as conveyers of change in the curriculum policy. The new textbooks have many more activity based exercises than they had before, and they require teachers and students to engage in a participatory manner. One of the respondents from Morigaon said, "The teaching methodology has changed a bit from the earlier times…the scenario has changed today with the introduction of the new books. The various subjects have to cater to how to contribute to the growth of the child and make the child more involved. We discuss that in the training. We have found that to be quite beneficial". Many teachers and resource persons in both the districts discussed that the new textbooks demand a more thorough level of preparation to teach from. A teacher from Medak mentioned, "Now a teacher has to be very well prepared with the lesson or else he/she will not be able to teach the class. The thing is that the teachers have to be well prepared to teach the lesson otherwise they can't do anything when they come to class". Many teachers appreciate the changes introduced through the new textbooks but feel challenged in interpreting those changes in practical situations.

Are the existing textbooks relevant to the teaching-learning needs and realities of teachers and students?

- **Textbook content for many subjects is found to lack in contextualization.** This has been a common finding derived from data gathered from Morigaon and Medak. In Morigaon, this concern is voiced more commonly for English and mathematics textbooks than those for Environmental Science and local language. One of the CRC's in Morigaon, commenting on the English and Mathematics textbooks said, "As all teachers agree, without paying heed to the village environment and just basing it on the urban scenario, these textbooks have been created". Teachers and cluster/mandal resource persons in the two districts have repeatedly mentioned about the lack of "local specific examples" in the textbooks, particularly English and mathematics. They suggested that "textbooks should be based on familiar things and should be reflective of our culture and society and should gel with our needs".

  In Medak, this issue is persistently pointed out by teachers for language textbooks – English and Telugu. Due the large geographic spread of Medak district there are many non-Telugu speaking ethnic communities in the region. Many respondents from teacher and CRC groups and surveys described their problems in communicating with children from non-Telugu families and strongly recommended the inclusion of details regarding the local customs and environment in these textbooks.

- **Mathematics and English textbooks are particularly difficult to comprehend and teach from.** The teachers find the English and the Mathematics textbook to be inconsistent with their ability and comprehension. As a respondent in the survey has said that "the mathematics and English textbooks are very complex and the students have difficulty comprehending it and even the teachers have difficulty in transacting the class". Regarding the content of the English textbook, the teachers in the focus group discussions in Morigaon have said that they "cannot even pronounce the words given in the English textbook". Teachers from Morigaon reported that English as a language was introduced in grades 1 to 3 just four years ago. Before then English as a language was introduced straight away in grade 4. With this sudden change in the English teaching policy in Assam, teachers are facing many challenges. On one hand, many teachers who never had to teach English earlier have to learn how to teach now. On the other hand, they need to learn how to teach the language to a much younger student population than what they were trained to teach. This situation is particularly challenging for older teachers who have been teaching for more than twenty years. As expressed in an FGD, "it is a very new experience for them [old teachers]. In addition they have not learnt English at that level. Thus English is a completely new subject for them". Survey respondents from Medak commonly reported that the level of mathematics expected to be taught from the textbooks was at a higher level than the child's capability. Similar concerns were voiced about English textbooks during FGDs with teachers in Medak. They reported that the level of English expected from a child was higher than what was expected from him/her for his/her native language. Teachers in both the districts seem to question their skills in English language and expressed their lack of confidence in teaching it to children.

- **The content does not match with students' ability.** Most teachers suggested that the content in many existing textbooks is not developmentally appropriate for children. They feel that the students are overloaded with the size of the content that need to be completed in a year and are unable to learn at their pace. A common suggestion was that, "the big volume of the textbooks should be reduced… not for just one or two subjects but the entire range of textbooks needs to be reduced in volume". In both the districts, teachers found students to be afraid of their English textbook and strongly expressed the need to "ensure that students do not get scared by looking at the [English] textbooks" and "should not feel stressed while they study the language".

  In our review of the data collected on the processes of designing and writing textbooks in the two states it was found that SCERT engages in a seemingly thorough and participatory exercise before producing books. Participants of this exercise are drawn from several relevant stakeholder groups. In Assam, the SCERT designs the regional language textbook and adapts the environmental science textbook to be more relevant to the state. For mathematics they translate the NCERT books into Assamese.

  In Medak, teachers too seem to be aware of this structure, yet they feel that authors of the books fail to relate with the needs and abilities of the children in their districts. A respondent noted, "We have seen that the authors of the textbooks and especially the English textbooks include primary teachers. Maybe they developed these textbooks based on the level of ability of the students they deal with, but that does not work for our students". In Morigaon, the teachers have said, "the Mathematics and English textbook should be designed according to the perceived ability level of a rural student of the country". There is a perceived need to incorporate 'ease of understanding' as a guideline for 'good' textbooks for primary schools. In one of the focus group a teacher said"… the textbooks should go from easy to difficult. The book should be such that even we should be able to explain and the child should be able to accept that knowledge. But these new textbooks, the children cannot follow".

  One of the biggest challenges as raised by the teachers was that the grade 1 textbooks start with the assumption that the students have already mastered the alphabet in the *anganwadi*[9] and the pre-school; however the students need to be taught from scratch when they join school in grade 1. There is a mismatch between the textbooks designed for grade 1 and the students entering that level. Teachers complain that "not all children go to the anganwadi or '*ka-shreni*[10]' regularly. Even if they do go, the students there do not learn the alphabets". Students from early on develop grave deficiencies in their literacy skills that obstructs their learning curve for other subject areas as well. The mathematics textbook has been reported to be text heavy and hence for students who cannot recognize basic alphabets or words, studying mathematics from a text heavy book is a challenge.

  Another way to look at the issue of student ability and grasp is to look at the comprehension abilities of the teachers. Teachers openly confess that if they are unable

[9] Anganwadi centers – early childhood and maternal care centers set up by the Government of India under the Integrated Child Development Services (ICDS) since 1975

[10] *Ka-shreni* refers to the preschool, usually in the vicinity as the public primary school in Assam

to follow the textbooks themselves, there is limited possibility of them enabling children's comprehension. Among many, a teacher in Morigaon argued, "the students will only learn when the teacher knows and if the teacher is unable to teach them then how will the students learn anything at all? We can't even pronounce the words mentioned in these textbooks". Reportedly, this struggle to learn from the textbooks is demoralizing for both students and teachers. In the words of a cluster resource coordinator in Morigaon, "If the students understand what the teacher is trying to teach then the teacher feels joy and if the students are unable to understand then the teachers workload increases".

- **Most children in rural schools depend entirely on schools to navigate through their books.** Teachers insisted that textbooks should address the fact that rural students usually come from economically disadvantaged households and have very few opportunities to learn outside schools. One teacher is quoted saying "The kind of children we teach, they come from poor, illiterate families and hence as soon as they leave school they have no opportunity to get any help from their parents with their studies or have to go do housework." Hence it is very important for the students to get all the knowledge in the school itself since they cannot depend on additional help with learning and assignments at home. Textbooks should hence be designed to enable children to use most parts of it independently. "Ease of understanding should be the focus of the primary books", said a teacher.

What is the nature of alignment between textbooks and other teaching-learning materials and practices?

- **The use and development of other teaching-learning materials (TLMs) is not prioritized.** In Assam teachers are supposed to receive 20 days of training in a year. Every month the teachers and CRC's in Morigaon had a one day meeting cum training workshop where they discussed the various classroom challenges in teaching the different subjects to try and come up with a solution, they devised lesson plans for the month, and prepared TLMs to supplement the lessons for the coming month. The training on the use of TLM mostly occurred in these monthly meetings. All the teachers and CRC's were in agreement that this is a very important platform for feedback and acts as continuous refresher training. However, this process has come under jeopardy since the cluster level meetings have been reduced in frequency from monthly to bi-annually. Furthermore, the budget for the year 2013/2014 has been reduced significantly. This lack of importance associated with TLMs by education administrators is also evident in Medak since they too recently cancelled the TLM budget for teachers in the district.

  Many teachers expressed the inability to use TLM's for various reasons. The reasons have been listed as
  - Lack of enough manpower in the school and hence a single teacher has to shift between different grades,
  - The TLM gets destroyed very quickly,
  - The administrative responsibilities such as the arrangement of the daily mid-day meal hampers with the academic responsibilities of the teacher (especially the head teacher),

- Involvement with many non-academic responsibilities such as duties during elections, census data collection, and managing polio-drops booth, etc.
- Hence, lack of time to prepare TLM

Some teachers feel that readymade TLMs should be provided from the state. As mentioned in the focus group discussion, "Instead of asking teachers to make their own TLM, the TLM should be provided. We cannot dedicate time to making TLM as there are not enough teachers".

- **Teachers do not have time to experiment and try out new teaching learning methods.** As discussed earlier there are several reasons for why teachers do not have enough time to carry out their professional duties, leave alone experimenting with new methods and materials. These take away a considerable amount of teaching time and further reduce the number of available teachers in the schools. Most participant teachers were in favor of reducing the number of administrative responsibilities of teachers in the schools. A lot of respondents in the survey said, "The mid-day meal administration wastes a lot of time that the teacher could have otherwise spent in the classroom". Lack of time is an important deterrent for teacher motivation to stay true to the principles and methods acquired during teacher trainings.

- **Teachers' theoretical awareness of the relevance of 'child friendly' classrooms does not translate into practice.** Most textbooks that are being used in the schools today require child-friendly and activity-based pedagogy. However several factors limit teachers from transacting the curriculum and using the textbooks in their intended form. Most of these factors have to do with teachers' inability to work with large groups of children since many of them are dealing with multiple grades and unfavourable student-teacher ratios.

- **Teaching-learning ideologies often mismatch across different stakeholder groups.** It is impossible to bring an overnight change in the values and beliefs of teachers and parents. It came across in several FGDs that different teachers had varying views about the new child-centered teaching learning methods and activity-based textbooks. For example, mathematics textbooks have been revised to include more application based problems to enable conceptual learning and reproduction of the concept in different contexts. However, many teachers do not approve of this revision. One of them in Morigaon has said that, "the Maths textbook should have more numerical problems and less story based problems". Similarly, a CRC in Morigaon said that "The [new] maths book has more stories and the number of real problems has significantly decreased. Actually the more problem sets that maths have and the more practice the students get, the better they will get. We have to be thankful of the amount of effort the teachers are putting into maths in spite of not being comfortable with it. They create their own problem sets and give to the students but that is not enough".

  A similar case was reported in Medak with regards to the new English books that are teaching letters using the "whole-to-part" approach that promotes recognition of letters in association with words. Hence children are exposed directly to words and phrases and they begin to learn letters based on the sounds made by those words. This method has been found to confuse many teachers. They feel that this method skips the crucial step of

getting children to memorize all the letters first. Parents too have come to schools to complain about this "illogical" method.

In Medak, teachers reported that many parents have complained about their children not receiving as much homework in public schools as private schools. In their view this is an indication of the lack of effort on a public teacher's part. Hence we find that teachers may often feel torn between unmatched expectations of parents and the State or National Curriculum Framework guidelines.

In what (reported) ways can textbooks better support teaching-learning processes in schools?

- **Teachers express the need for more training on the use of textbooks.** Teachers in both the districts have reported the need for more training on different issues – particularly the use of new textbooks and the implementation of the continuous comprehensive evaluation (CCE) method. They also expressed the need for training on teaching methods commensurate with the requirements of the new textbooks. They feel that the existing training programs are not sufficient. This finding is consistent with our statistical findings that reveal the perceived relevance of teacher training in helping teachers acquire necessary skills to promote all-round student development, organize classroom activities, and manage community relations.

- **New textbooks should be introduced after sufficient training.** NCF, CCE, and RTE have come up with important considerations for the process of designing the textbooks from the point of view of the SCERT. In words of an SCERT official in Medak, "NCF was prepared in 2005 and then RTE came into being. Hence we revised the state-level curriculum framework accordingly. The comprehensive curricular framework was made for the first time. In 2009, RTE came out; hence according to RTE the curriculum must be evaluated. We need to give space for child exploration, introduction for CCE, all the things that RTE speaks about. That is why we first revised the textbooks, curriculum framework, and then question papers and academic standards". But for the teachers and resource persons the important consideration while devising a textbook is whether a child is able to comprehend the material.

  Many teachers in the FGDs repeatedly stressed on the importance of having textbooks with more pictures. One teacher stated, "Textbooks must change, we can't just keep the same textbooks for ten years, we need development. But when we make these changes, we have to make sure teachers are trained well and that we start gradually". In Morigaon especially, teachers strongly opposed the ways in which new textbooks have been introduced in schools without sufficient notice or training. Some of the views expressed by participants of FGDs were: "Ours heads were spinning when we first saw these textbooks and had no idea that we would be getting new textbooks", and "I just have one thing to say and that is that these textbooks are a punishment". A common suggestion that came from different FGDs conducted across the two districts was to organize necessary trainings before the books are brought to the school as opposed to the existing practice of training teachers after the books are introduced. A participant observed, that "trainings should be done thoroughly before they introduce these textbooks. Don't tell

me to teach this book without training me on how to use it first. You can imagine how much I would benefit or my students will benefit if I have to teach about things that I have no knowledge of".

- **More participatory procedures should be employed in designing the textbooks.** Lack of relevance to the local culture and the needs and abilities of students and teachers comes across as a common critique of the existing textbooks. Despite the many efforts of SCERT to engage different stakeholders in the process of designing textbooks, users of the books continue to feel a sense of disconnect between the content of the books and the realities of their environment.

- **Teachers should be allowed to have necessary time, space and resources to plan their lessons and activities.** As discussed earlier a number of factors that create gaps between the learned principles and the executed practices of pedagogy have to do with lack of resources – time, materials, space, and manpower. The existing textbook and training content demands certain ideal conditions to bring about an impact. The contexts in which teachers teach and students learn are from that ideal. Teachers and cluster/mandal resource persons requested a greater understanding of their situation in designing curricular and pedagogic policies for them.

9. CONCLUSION

Textbooks continue to be the primary source for education in schools. The NCF states: "The pluralistic and diverse nature of Indian society definitely makes a strong case for preparing a variety of not only textbooks but also other materials, so as to promote children's creativity, participation and interest, thereby enhancing their learning. No one textbook can cater to the diverse needs of different groups of students" (NCERT, 2005, p. 94). However we find that in Morigaon and Medak the budgetary allocations for developing teaching-learning materials (TLMs) have gone down significantly over the past one year. Given that teachers feel rushed to complete the prescribed curriculum, lack of resources make it further difficult for them to develop supplementary teaching learning materials for children. As a result, despite repeated trainings on the relevance of learning by application and use of multi-media, teachers continue to teach through the age old didactic practices. Teachers and students become even more dependent on textbooks that are for most schools and households the only tool for literacy.

Deducing from our various data sources we conclude that Morigaon is worse off. This is probably the case for a lot of reasons – geographic, economic, conflict, historical negligence of development, etc. This is common knowledge and it will take years to ameliorate these situational factors. Nevertheless, the comparative analysis of the two districts demonstrate that teachers (and presumably schools and children) fare worse in Assam than in more wealthy, progressive states like Andhra Pradesh and that this is the case in terms of training and textbooks. More funding and resources need to be spent from central reserves on education in poor states. However, it is important to note that even though Morigaon may appear a lot worse off than Medak, Medak also has shortcomings in most areas, and their ratings are relatively better, but not great.

Background characteristics of students and the environment of schools appear to be important factors in determining the success of any education intervention. Hence, for teacher training and textbook revisions to have desired impact, necessary changes need to be brought about in the context of students and teachers targeted. Our findings suggest that many teachers are in fact working hard and their participation in and responses to the study questionnaires are consistent and logical enough to be reliable and informative. They want more training and they struggle most with teaching English and Mathematics.

Relevance of textbooks to the context, need and ability of students and teachers is a commonly expressed concern among teachers and cluster/mandal resource coordinators. Students and teachers experience a sense of disconnect with the content of textbooks that either appears to be too urban and removed from the rural realities of the two districts, or too difficult and unfamiliar in method for teachers to comprehend, or developmentally inappropriate for children to relate with. Lack of relevant training to support the use and incorporation of textbooks in classroom teaching is contributes further to the problem.

Finally, it seems that the administration of curricular reform and policy changes tends to alienate teachers in the villages. Teachers feel that their voices have limited reach to education policy makers. Lack of local participation in the decision making regarding textbooks and teacher training, it seems, further widens the gap between policy intentions and implementation realities.

10. MOVING FORWARD

The present study has provided a close look into the challenges and opportunities faced by students, teachers, and resource persons in interpreting the prescribed curriculum in the classrooms. It is essential that we reflect on the realities of the world in which children learn and teachers teach. It is only within the context of these realities that we can fully comprehend why our policies fail to deliver the intended outcomes. While further research is warranted, some possible recommendations have been outlined in the following section. As we acknowledge the enormity of the challenge that our local governments and education functionaries are faced with, and as we admire the persistence with which the Department of Education, SSA, DIET, and SCERT have been working towards improving the quality of education in the two districts, we hope that some of the following recommendations will lead to constructive discourse and practice.

Textbooks

As discussed in this paper, textbooks play an important role in guiding the teaching and learning practices of students and teachers. This situation could either be interpreted as a problem that needs to be resolved by promoting the use of other teaching-learning materials and practices, or it could be viewed as an opportunity to use textbooks as a medium for change in teaching-learning practices in schools. District, state, and national-level debates need to be organized to discuss the role and relevance of textbooks. Research activities need to be undertaken to develop strengthening strategies or alternative replacements.

Furthermore, textbooks should be tested on various aspects – relevance to the local culture and environment, compatibility with the assigned students' learning levels, and familiarity with teachers' comprehension skills. Local DIETs should have a major role to play in ensuring that their district and cluster/mandal specific feedback on new textbooks is conveyed to the relevant authorities.

Teacher Training

Teacher training and change in curriculum policy need to go hand in hand. District level DIETs need to assume a greater responsibility in conveying training needs of the district to the state level. New texts and materials should be introduced with greater planning and notice. Sufficient training of teachers to incorporate the new textbooks into their teaching should always precede the introduction of textbooks in schools.

District Education Action Plan and Budget

Relevant departments of education in both the districts work annually on their respective Annual District Education Work and Budget Plans. However, for greater participation and accountability we suggest possible partnerships between the government and civil society organizations as well as research and advocacy groups such as CGC|SA. Such partnerships can help the local government in making program plans and budgetary allocations based on relevant policy research. By bringing several actors on the table we can ensure evidence-based planning of priority areas from multiple perspectives. Evaluation of prior budgetary plans can reveal possible lessons for the coming years.

Monitoring and Evaluation

A systematic process of monitoring and evaluating the efficacy of textbooks and training opportunities should be instituted at the cluster level all the way up to district and state levels. The approach of this M&E system should not be accusatory and judging. Instead it should be a simple procedure that allows teachers to report to their cluster/mandal level officers on specific problems they face in teaching specific topics from the textbooks. Simple and brief feedback forms could be designed to allow teachers to provide their evaluation at a weekly basis. Synthesis of the findings from these reports can be presented by cluster/mandal officers in their monthly meetings. Reports from cluster/mandal level should be studied by relevant offices in DIET and SCERT to consider necessary changes and modifications in the textbooks. A sample of teacher feedback forms can be collected on a monthly basis by MDEP to analyze the pattern of findings, and report them to the relevant offices in time for the scheduled revisions in the textbooks.

Student health and nutrition

In order for any program to have its desired impact it is necessary to ensure the preparedness of its recipients. Attempts need to be made to ascertain the school readiness of children in the two sites. We recommend district governments to strengthen the implementation of the School Health Program in their respective regions. Regular health check-ups and remediation is necessary to ensure children's health and uptake of school programs. Further, we insist on considering the introduction of daily breakfast meal along with the mid-day meal program. Intake of nutrition early in the day has been associated with significant increase in student learning and performance (Pollitt, 1995). There also exists empirical evidence to the fact that breakfast is positively associated with improved psychosocial development of children (Murphy et al, 1998). We advocate consumption of a healthy breakfast on a daily basis consisting of a variety of foods, especially high-fibre and nutrient-rich whole grains, fruits, and dairy products.

Student participation

Both Morigaon and Medak report alarmingly unfavorable rates of school drop-out, school retention and transition rates. Efforts need to be made to understand the attendance patterns of children and school-level factors that possibly contribute negatively to these indicators.

School environment

The school environment should be made more conducive to teaching learning processes. High number of single teacher and single classroom schools is a reality to needs to be dealt with. Evidence should be collected on the impact of state-run programs to deal with multi-grade-multi-level teaching in schools. Networks should be created across states to enable cross-learning of best practices within the country.

While some of these interventions may need a long-term planning and support, a few may be implemented immediately to address the need at hand.

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APPENDIX 1: SUMMARY OF RESEARCH DESIGN

UNDERSTANDING THE PROBLEM

- Reviewed relevant literature
- Visited villages, schools, relevant offices
- Carried discussions with teachers, functionaries, policy makers, scholars, etc.

DESIGNING THE STUDY

- Designed the research study and tools
- Translated the tools
- Sought permissions from relevant official authorities
- Piloted the tools
- Revised the tools and study accordingly
- Applied for and received IRB approval

COLLECTING DATA

- Hired local teams and trained them to carry out the surveys
- Contacted the sampled schools and surveyed the teachers
- Informed the prospective participants for interviews and FGDs and sought permissions
- Conducted interviews and FGDs

PROCESSING DATA

- Coded the survey responses numerically into SPSS
- Open-ended responses translated into English
- Translated and transcribed the interviews and FGDs in English
- Designed the coding scheme based on a mix of predetermined and emergent codes
- Coded the data qualitatively

ANALYSING THE DATA

- Carried statistical tests: descriptive statistics, t-tests, and factor analyses
- Conducted SWOT analysis of teacher training and curricular design systems
- Triangulated the data from different tools

PRESENTING THE FINDINGS

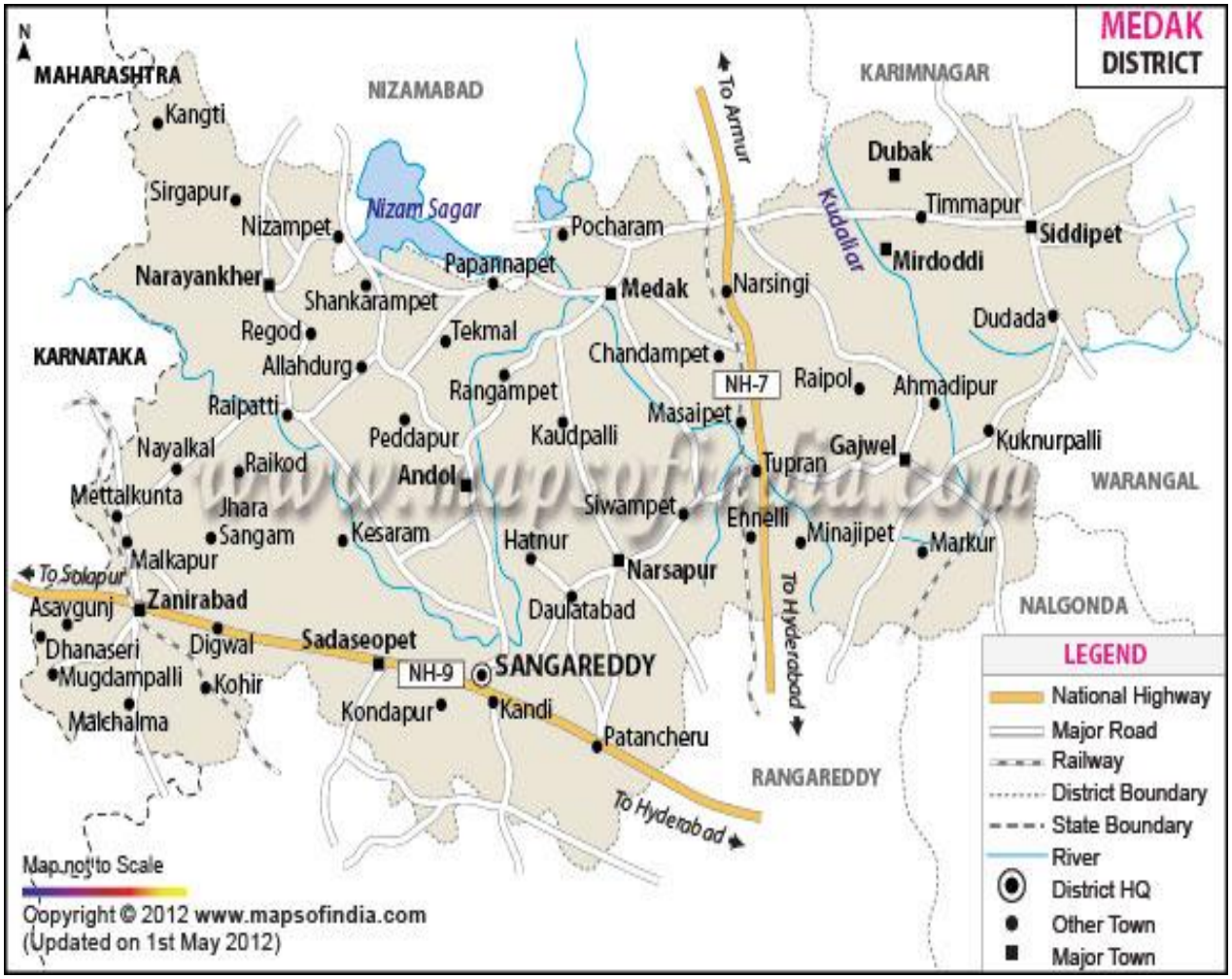
- Identified key educational issues
- Drafted policy recommendations

APPENDIX 2: PHYSICAL MAPS OF MORIGAON AND MEDAK

2.1 Physical map of District Morigaon

Retrieved on Aug 27, 2013 from http://www.mapsofindia.com/maps/assam/districts/marigaon.htm

2.2 Physical map of District Medak



Retrieved on Aug 27, 2013 from http://www.mapsofindia.com/maps/andhrapradesh/districts/medak.htm

APPENDIX 3: DISE 2011-12 REPORT CARDS FOR MORIGAON AND MEDAK

DISTRICT ELEMENTARY EDUCATION REPORT CARD : 2011-12

District	MARIGAON			State	Assam		
Primary cycle	1-4	Upper primary cycle	5-7	Ratio of girls to boys enrolment (primary calsses)			1.02
Data reported from	Number of blocks	4	Number of Clusters	63	Number of villages	532	Number of schools	1853

Basic Data, 2011

Total population (in 000's)	958	% 0 - 6 population	16.6	% Urban population	7.7	Sex ratio	974	Sex ratio 0-6	950
Decadal growth rate	23.4	% SC pop. (2001)	12.9	% ST pop. (2001)	15.6	Overall literacy	69.4	Female literacy	65.0

Key Data: Elementary Education

School category	Total schools*			Rural schools*		Total enrolment*			Rural enrolment*		Teachers*		
	Govt.	Private	Unrec.	Govt.	Private	Govt.	Private	Unrec.	Govt	Private	Govt.	Private	Unrec.
P only	1,050	17	312	1,039	16	104,198	1,370	23,465	103,149	1,335	1,908	111	841
P+ UP	33	14	0	31	13	7,802	1,642	0	6,873	1,538	275	148	0
P+UP+Sec/HS	1	20	0	0	14	1,026	5,394	0	1,026	3,430	31	325	0
UP only	147	213	6	143	211	24,040	22,282	476	23,662	21,968	949	1,534	45
UP + Sec/HS	32	5	3	29	3	6,200	782	221	5,925	582	379	64	37
No response	0	0	0	0	0	0	0	0	0	0	0	0	0

Performance Indicators	School Category					
	P. only	P + UP	P+sec/hs	U.P. only	UP+sec	All Schools
% Single classroom schools	30.4	0.0	0.0	4.9	0.0	23.6
% Single teacher schools	16.1	0.0	0.0	0.0	0.0	12.0
% Schools with girls toilets	66.0	91.5	90.5	66.9	92.5	67.7
% Schools with boys toilets	54.0	89.0	90.0	60.0	85.0	56.1
% Schools with boundary wall	17.0	44.7	71.4	13.1	67.5	18.7
% Schools with drinking water facility	85.1	97.9	100.0	92.1	100.0	87.3
% Schools with playground	40.0	42.6	42.9	61.2	75.0	45.0
% Schools with ramps	45.0	61.7	4.8	36.1	12.5	42.5
% Schools with electricity	4.0	46.8	85.7	28.4	75.0	12.4
% Schools with computer	0.0	34.0	42.9	22.4	47.5	6.8
% No female teacher schools (tch>=2)	32.2	14.9	4.8	21.0	20.0	29.0
% Govt. schools with kitchen-shed	82.0	84.8	0.0	41.5	40.6	76.2
% Govt. schools providing mid day meal	99.4	97.0	0.0	95.2	75.0	98.2
% Govt. schools with SMC	92.3	84.8	100.0	94.6	87.5	92.2
% Enrolment in Govt. schools	80.8	82.6	16.0	51.4	86.1	72.0
% Enrolment in single-teacher schools	13.0	0.0	0.0	0.0	0.0	8.4

Enrolment*				
Grade	2008-09	2009-10	2010-11	2011-12
I	41,010	32,793	38,457	33,116
II	31,351	25,971	32,322	31,129
III	27,329	22,502	28,203	27,640
IV	25,647	21,519	25,249	24,703
V	22,581	22,382	22,301	21,997
VI	21,420	20,735	21,211	20,936
VII	19,910	19,869	20,141	19,808
VIII	12,225	13,117	16,210	19,569
Total Pr.	125,337	102,785	124,231	116,588
Total U.P.	63,911	62,986	63,653	62,741

Transition Rate (Pr. to U. Pr.)	93.6
Retention Rate (primary level)	60.2

GER / NER	2009-10	2010-11	2011-12
GER (Pri.)	140.5	168.3	child pop.not available
NER (Pri.)	100.0	100.0	
GER(U.Pri)	94.0	101.6	
NER(U.Pri)	83.9	85.6	

% Change in Enr. over previous year (Govt. Schools)	Primary	U. Primary
	0.9	-6.6

SC, ST & OBC Enr.	Primary	U. Primary
% SC enrolment	11.4	14.1
% SC girls to SC enrolment	48.7	49.4
% ST enrolment	13.4	15.2
% ST girls to ST enrolment	48.7	49.7
% OBC enrolment	8.6	11.9
% OBC girls to OBC enr.	49.8	48.9

Muslim Enr.	Primary	U. Primary
% Muslim enrolment	51.7	47.5
% Muslim girls to muslim enrolment	51.2	60.0

Indicators	School category					
	P. only	P + UP	P+sec/hs	U.P. only	UP+sec	All schs
% Girls	50.7	51.3	43.2	56.0	51.1	51.7
Pupil-teacher ratio (PTR)	45	22	18	19	15	30
Student-classroom ratio (SCR)	41	33	27	35	19	37
% Schools with <= 50 students	21.9	2.1	0.0	3.3	0.0	17.0
% Sch. approachable by all weather roads	100.0	100.0	100.0	100.0	100.0	100.0
% Female teachers	33.1	35.5	52.5	24.6	25.8	30.5
% Govt. schools opened since 2003	22.0	3.0	0.0	0.0	0.0	12.5

Flow Rates			
Grade	R.R.	D.O.R.	P.R.
I	0.4	18.9	80.7
II	0.2	14.5	85.3
III	0.2	12.4	87.5
IV	0.1	12.9	87.0
V	0.1	6.3	93.6
I - V	0.2	13.7	86.1
VI	0.2	6.8	93.1
VII	0.2	3.1	96.7
VIII	1.3	#	#

Enrolment	All Girls	With Disability	
Grade		Boys	Girls
I	16,266	240	143
II	15,391	261	234
III	14,113	290	246
IV	12,684	319	234
V	11,414	239	201
VI	11,378	141	168
VII	10,900	158	180
VIII	10,730	145	152
Total	102,876	1,793	1,558

Classrooms/Other Rooms

School category	Total classrooms	% good condition	% minor repairs	% major repairs	Other rooms
Primary only	3,183	53.3	20.1	26.6	241
Primary with upper primary	286	50.0	20.6	29.4	49
Primary with U.P. sec/higher sec.	239	61.9	27.6	10.5	83
Upper primary only	1,340	37.2	20.5	42.2	270
Upper primary with sec./higher sec	376	47.3	23.4	29.3	96

% Schools with SCR >		% Schools with PTR >	
30 at Pri. Level	35 at U.Pri. Level	30 at Pr. Level	35 at U.Pr. Level
58.3	39.9	54.9	9.9

Average Instructional Days	
Primary	Upper Pr.
218	222

% Pre-primary Schools at Primary Level
53.6

Position of Teachers by Educational Qualification (Other than Contractual-teachers)

School category	Below Sec.	Secondary	Higher secondary	Graduate	Post graduate	M. Phil.	Others	No response
Primary only	195	1,498	734	227	12	1	5	0
Primary with Upper Primary	6	37	139	221	16	2	1	0
Primary with U. P. & Sec/ H. Sec.	1	13	43	233	47	3	2	0
Upper Primary only	33	281	1,136	1,013	26	2	28	0
Upper Primary with Sec./Higher Secondary	2	21	57	315	43	6	12	0
Contractual-teachers	4	38	135	45	13	0	1	0

% Professionally Trained Teachers	
Regular	Contractual
42.5	13.1

Non-Tch Assignment	
Days involved	24
%Tch Involved	9.6

Gender & Caste Distribution of Teachers*

School category	Avg. No. of Tchs.	Regular teachers				Contractual-teachers			SC teachers		ST teachers		%Teachers Recvd in-service training	
		Total	Male	Female	No res	Male	Female	No res	Male	Female	Male	Female	Male	Female
Primary only	2.7	2860	1789	883	0	124	64	0	222	92	238	126	49.8	40.4
Primary with upper prim.	9.0	423	273	149	0	0	1	0	18	20	34	22	26.0	19.3
Prim.with U.P.& Sec/H.S	17.0	356	165	177	0	4	10	0	17	22	26	22	0.0	0.5
Upper Primary only	7.0	2528	1900	619	0	6	3	0	198	53	216	74	35.3	38.4
U. Primary with Sec./H.S.	13.0	480	333	123	0	23	1	0	29	8	25	17	4.2	3.2

Enrolment by Medium of Instructions*

% Total Grossness	Primary	Upper Primary
	7.3	19.8

Category	Assamese	English	Hindi	Bengali	Bodo
P. only	127939	176	194	436	288
P + UP	9378	0	0	0	66
P+sec/hs	3990	1404	1026	0	0
U.P. only	46206	188	109	204	66
UP+sec	6971	232	0	0	0

% Schools Recvd (Previous year)		
	School dev. grant	T L M grant
	62.2	59.0
	66.0	68.1
	0.0	0.0
	82.2	83.3
	25.0	30.0

Incentives: No. of Beneficiaries		
Incentive	Primary	Upper primary
Text books	134533	53791
Uniform	1997	1517
Attendance	751	484
Stationery	22863	11575
Transport	15	14
Residential	0	407

= not applicable na = not available * Some totals may not match due to no response in classificatory data items

DISTRICT ELEMENTARY EDUCATION REPORT CARD : 2011-12

District	MEDAK			State	Andhra Pradesh		
Primary cycle	1-5	Upper primary cycle	6-8	Ratio of girls to boys enrolment (primary calsses)			0.94
Data reported from	Number of blocks	46	Number of Clusters	457	Number of villages	1215	Number of schools	3871

Basic Data, 2011

Total population (in 000's)	3032	% 0 - 6 population	11.5	% Urban population	24.0	Sex ratio	989	Sex ratio 0-6	954
Decadal growth rate	13.6	% SC pop. (2001)	17.6	% ST pop. (2001)	5.0	Overall literacy	62.5	Female literacy	52.5

Key Data: Elementary Education

School category	Total schools*			Rural schools*		Total enrolment*			Rural enrolment*		Teachers*		
	Govt.	Private	Unrec.	Govt.	Private	Govt.	Private	Unrec.	Govt	Private	Govt.	Private	Unrec.
P only	2,014	251	78	1,927	142	148,850	60,889	6,850	138,377	32,702	6,186	2,167	388
P+ UP	427	232	30	417	164	54,850	37,061	4,512	52,867	25,179	2,631	1,997	225
P+UP+Sec/HS	28	8	9	22	8	8,832	2,722	1,575	7,708	2,722	381	204	82
UP only	0	0	0	0	0	0	0	0	0	0	0	0	0
UP + Sec/HS	547	236	11	513	126	81,136	34,926	658	72,336	17,170	5,755	2,336	89
No response	0	0	0	0	0	0	0	0	0	0	0	0	0

Performance Indicators	School Category					
	P. only	P + UP	P+sec/hs	U.P. only	UP+sec	All Schools
% Single classroom schools	22.3	1.9	0.0	0.0	0.8	14.0
% Single teacher schools	8.4	0.6	0.0	0.0	0.0	5.2
% Schools with girls toilets	67.6	80.5	93.6	0.0	83.3	73.3
% Schools with boys toilets	64.0	77.0	81.0	0.0	78.0	68.2
% Schools with boundary wall	49.9	70.5	77.8	0.0	80.9	60.2
% Schools with drinking water facility	75.7	88.4	97.8	0.0	92.4	81.6
% Schools with playground	45.9	61.2	71.1	0.0	75.1	54.9
% Schools with ramps	8.5	15.1	11.1	0.0	15.6	11.2
% Schools with electricity	70.8	84.6	97.8	0.0	92.3	78.0
% Schools with computer	11.4	32.9	73.3	0.0	71.9	28.4
% No female teacher schools (tch>=2)	23.2	9.6	13.3	0.0	8.8	17.7
% Govt. schools with kitchen-shed	29.2	53.4	85.7	0.0	16.1	30.8
% Govt. schools providing mid day meal	97.3	99.3	7.1	0.0	94.1	96.2
% Govt. schools with SMC	73.4	80.6	21.4	0.0	72.6	73.8
% Enrolment in Govt. schools	68.7	56.9	67.3	0.0	69.5	66.3
% Enrolment in single-teacher schools	2.3	0.3	0.0	0.0	0.0	1.2

Enrolment*				
Grade	2008-09	2009-10	2010-11	2011-12
I	75,224	76,877	74,736	70,332
II	54,279	54,671	60,005	59,979
III	52,803	52,788	55,813	58,583
IV	50,641	51,427	53,460	54,408
V	49,952	51,497	53,657	53,453
VI	49,584	47,374	48,966	51,089
VII	48,664	46,988	46,716	50,155
VIII	46,970	45,121	43,967	44,862
Total Pr.	282,899	287,260	297,671	296,755
Total U.P	145,218	139,483	139,649	146,106

Transition Rate (Pr. to U. Pr.)	95.1
Retention Rate (primary level)	69.5

SC, ST & OBC Enr.	Primary	U. Primary
% SC enrolment	19.2	20.1
% SC girls to SC enrolment	48.9	50.1
% ST enrolment	10.5	6.1
% ST girls to ST enrolment	47.6	42.3
% OBC enrolment	56.8	59.1
% OBC girls to OBC enr.	49.0	50.3

Muslim Enr.	Primary	U. Primary
% Muslim enrolment	12.5	11.0
% Muslim girls to muslim enrolment	49.3	52.0

GER / NER	2009-10	2010-11	2011-12
GER (Pri.)	114.3	120.6	child pop.not available
NER (Pri.)	90.0	95.3	
GER(U.Pri)	87.0	89.6	
NER(U.Pri)	66.1	69.4	

% Change in Enr. over previous year (Govt. Schools)	Primary	U. Primary
	0.6	-3.9

Indicators	School category					
	P. only	P + UP	P+sec/hs	U.P. only	UP+sec	All schs
% Girls	49.0	48.3	46.8	0.0	49.6	48.9
Pupil-teacher ratio (PTR)	25	20	20	0	14	20
Student-classroom ratio (SCR)	26	21	25	0	22	24
% Schools with <= 50 students	44.3	4.1	0.0	0.0	7.6	29.1
% Sch. approachable by all weather roads	100.0	100.0	100.0	0.0	100.0	100.0
% Female teachers	51.2	46.1	50.1	0.0	38.2	45.3
% Govt. schools opened since 2003	3.6	2.6	7.1	0.0	25.2	5.8

Flow Rates			
Grade	R.R.	D.O.R.	P.R.
I	7.2	14.6	78.2
II	0.7	3.9	95.4
III	0.6	3.9	95.5
IV	0.3	1.7	98.0
V	0.3	7.7	92.0
I - V	2.2	6.9	91.0
VI	0.3	0.9	98.8
VII	0.3	6.2	93.6
VIII	0.2	#	#

Enrolment	All Girls	With Disability	
Grade		Boys	Girls
I	33,962	308	204
II	29,145	265	180
III	28,523	267	187
IV	26,486	204	180
V	25,973	177	152
VI	25,505	85	94
VII	25,090	96	109
VIII	21,883	65	64
Total	216,567	1,467	1,170

Classrooms/Other Rooms

School category	Total classrooms	% good condition	% minor repairs	% major repairs	Other rooms
Primary only	8,343	75.1	18.3	6.7	1,639
Primary with upper primary	4,502	82.9	12.8	4.3	916
Primary with U.P. sec/higher sec.	530	85.5	11.5	3.0	293
Upper primary only	0	0.0	0.0	0.0	0
Upper primary with sec./higher sec	5,368	78.9	13.6	7.5	2,140

% Schools with SCR >		% Schools with PTR >	
30 at Pri. Level	35 at U.Pri. Level	30 at Pr. Level	35 at U.Pr. Level
33.4	20.7	17.0	4.1

Average Instructional Days	
Primary	Upper Pr.
222	222

% Pre-primary Schools at Primary Level
9.0

Position of Teachers by Educational Qualification (Other than Contractual-teachers)

School category	Below Sec.	Secondary	Higher secondary	Graduate	Post graduate	M. Phil.	Others	No response
Primary only	0	193	1,323	3,982	1,096	13	9	0
Primary with Upper Primary	0	99	581	2,358	688	7	14	0
Primary with U. P. & Sec/ H. Sec.	0	4	18	154	295	17	2	0
Upper Primary only	0	0	0	0	0	0	0	0
Upper Primary with Sec./Higher Secondary	0	112	363	3,871	3,245	58	37	0
Contractual-teachers	0	298	836	2,375	384	7	2	0

% Professionally Trained Teachers	
Regular	Contractual
96.3	92.0

Non-Tch Assignment	
Days involved	19
%Tch Involved	6.3

Gender & Caste Distribution of Teachers*

School category	Avg. No. of Tchs.	Regular teachers				Contractual-teachers			SC teachers		ST teachers		%Teachers Recvd in-service training	
		Total	Male	Female	No res	Male	Female	No res	Male	Female	Male	Female	Male	Female
Primary only	3.9	8741	3172	3444	0	1090	1035	0	692	571	418	128	43.4	27.8
Primary with upper prim.	7.4	4853	2057	1690	0	561	545	0	366	271	142	35	29.5	19.6
Prim.with U.P.& Sec/H.S	18.5	667	259	231	0	74	103	0	52	37	16	4	2.1	1.8
Upper Primary only	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
U. Primary with Sec./H.S.	10.4	8180	4909	2777	0	143	351	0	512	389	184	61	26.3	18.7

Enrolment by Medium of Instructions*

% Total Grossness	Primary	Upper Primary
	20.7	21.8

Category	Telugu	English	Urdu	Kannada	Others
P. only	153768	51435	10777	532	77
P + UP	62596	24491	8800	536	0
P+sec/hs	3119	9788	222	0	0
U.P. only	0	0	0	0	0
UP+sec	73097	39246	4345	32	0

% Schools Recvd (Previous year)		Incentives: No. of Beneficiaries		
School dev. grant	T L M grant	Incentive	Primary	Upper primary
80.0	70.0	Text books	191099	115256
60.5	54.1	Uniform	145099	68920
20.0	13.3	Attendance	6733	4370
0.0	0.0	Stationery	5294	4804
57.4	56.0	Transport	208	815
		Residential	887	3519

= not applicable na = not available * Some totals may not match due to no response in classificatory data items

APPENDIX 4: AUTHORS' BIOGRAPHY

Huma Kidwai is a doctoral (EdD) candidate at Teachers College, Columbia University in the Department of International and Transcultural Studies. She is researching on the state-madrassa partnerships for educational reform and development in India. In 2013, she was awarded the American Institute of Indian Studies (AIIS) fellowship to conduct her data collection in India. Huma graduated from Harvard University with a Masters degree (EdM) in International Education Policy. She also holds a Masters degree in Child Development from Delhi University where she focused on Early Childhood Care and Education. Huma has worked at the World Bank in New Delhi as a research analyst with the Poverty Reduction Group. She has also worked on projects on health, education and other civil rights at the Praxis Institute for Participatory Practices in New Delhi. Currently Huma is working as a Research Associate at Columbia Global Centers for Model Districts Education Project.

Denise Burnette is Professor of Social Work at Columbia University. Dr. Burnette holds an M.S.S.W. (University of Tennessee), an International Masters in Mental Health Policy and Services (Universidade Nova de Lisboa) and a Ph.D. in Social Welfare (University of California, Berkeley) and certification in College and University Administration (Harvard University). As an International Scholar with theOpen Society, she has served in Mongolia and Albania. Dr. Burnette has held Senior Fulbright fellowships at Tata Institute of Social Sciences in Mumbai (2006-2007) and at the Centre for Research on HIV/ AIDS at the University of Botswana (2012-2013).

Shreyanka Rao is the Research Associate at the Columbia Global Centers' project for Model Districts Education Project. She has a Master of Arts in International Education Development (International Humanitarian Relief) from Teachers College, Columbia University. Before joining CGC, she worked with Columbia University to build a curriculum titled "Five Boroughs to the World" that will support Columbia University's World Leaders Forum project. She has also worked as a Child and Youth Protection and Development Intern at International Rescue Committee on the 'Education in Emergencies' course that is being offered at the University of Nairobi, Kenya. She has a B.A. in International Studies from Soka University of America, California. She minored in Spanish and spent a semester studying Human Rights at Universidad de Buenos Aires.

Seema Nath is a Research Assistant at Columbia Global Center | South Asia. Her main focus is to provide research and technical support to the Model District Education Project, 'Access to Achievement' which operates in two "Model Districts" in Morigaon (Assam) and Medak (Andhra Pradesh). She received her Master in Philosophy (MPhil) in Social and Developmental Psychology from Cambridge University, UK where she focused on autism research. She holds a Master's in Organizational Behavior from S.N.D.T University, Mumbai and has completed her B.A (Honors) Psychology from Lady Shri Ram College, Delhi University. Her research interests are international education development, theory of mind, memory in autism spectrum disorder and inclusive education.

Monisha Bajaj is Associate Professor of International and Comparative Education at Teachers College, Columbia University. Her research and teaching interests focus on peace and human rights education, social inequalities and schooling, and educational innovation in the global South. Professor Bajaj is the editor of the *Encyclopedia of Peace Education* (Information Age, 2008) and is the author of a teacher-training manual on human rights education (UNESCO, 2003) as well as *Schooling for Social Change: The Rise and Impact of Human Rights Education in India* (Bloomsbury, 2012), which was awarded the Jackie Kirk Outstanding Book Prize of the Comparative and International Education Society. She has also developed curriculum--particularly related to the incorporation of peace education, human rights, and sustainable development--for non-profit educational service providers and inter-governmental organizations, such as UNICEF.

Nirupam Baipai is the Director of the Columbia Global Centers | South Asia and a senior Development Advisor at the Earth Institute at Columbia University in New York. He is also a member of the United Nations Millennium Project on the Millennium Development Goals, the internationally agreed goals to reduce extreme poverty, disease and hunger by the year 2015. Since June 2004, Dr. Bajpai has had the high honor and privilege of advising the Honorable Dr. Manmohan Singh, Prime Minister of India and several of his cabinet ministers, including the Minister of Health and Family Welfare. Earlier, between 1999 and 2004, Dr. Bajpai served as an economic advisor to the Honorable Atal Bihari Vajpayee, former Prime Minister of India and to several of his cabinet ministers, including the Ministers of Finance, Commerce and Industry, and Information Technology. Dr. Bajpai has led several teams of social and physical scientists to conduct research and advice several State Governments on **"**Scaling up Services in Rural India**"** wherein teams led by Dr. Bajpai were working with Rural Communities in India**.** Dr Bajpai's work most notably along with Professor Jeffrey Sachs has helped advice policymakers on a variety of issues relating to the Indian economy and India's economic reforms, both at the federal and state levels.